Micro Focus Enterprise Server 2.2

Release Notes

Contents

Micro Focus Enterprise Server Release Notes

These release notes contain information that might not appear in the Help. Read them in their entirety before you install the product.

> **Note:** This document contains a number of links to external Web sites. Micro Focus cannot be responsible for the contents of the Web site or for the contents of any site to which it might link. Web sites by their nature can change very rapidly and although we try to keep our links up-to-date, we cannot guarantee that they will always work as expected.

Installation

Installing on Windows

System Requirements for Enterprise Server for Windows

Hardware Requirements

The disk space requirements are approximately:

Platform	Enterprise Server	Sentinel RMS License Manager
x86 Windows platforms	280MB	35MB
x64 Windows platforms	410MB	35MB

Note: This includes the space needed to cache information locally so that you can modify the installation without the original source media.

Operating Systems Supported

The following platforms are supported:

For a list of the supported operating systems, check the *Product Availability* section on the Micro Focus SupportLine Web site: *http://supportline.microfocus.com/prodavail.aspx*.

Note:

- This product can be installed on earlier versions of Windows but it has not been tested on them.

Software Requirements

Note: The setup file will check your machine for whether the prerequisite software is installed and will install any missing prerequisites and the product components.

Before installing this product, you must have the following software installed on your computer:

- The Microsoft .NET Framework - the setup file installs Microsoft .NET Framework 4 with Enterprise Server or .NET Framework 4.5 with Enterprise Server. You might need to install the following version of the .NET framework manually, if it is targeted by your applications:

  - Microsoft .NET Framework 2 - if your applications use the ILCLR(2) Compiler Directive or if they target the .NET Framework versions 2, 3 or 3.5. You might need to download these installers depending on the .NET Framework you are targeting.

    To download the Microsoft .NET Framework 2 *click here*.

    Microsoft .NET Framework 2 or later is also required for the Micro Focus License Manager if you install this on a separate machine as a license server.
  - Microsoft .NET Framework 4.5 might be required for COBOL applications created with Visual Studio 2012.

Note:

- .NET Framework 3 is provided with Windows Vista and Windows Server 2008.
- .NET Framework 3.5 is provided with Windows 7 and Windows Server 2008 R2.

- Microsoft's Web Platform Installer 2.0 if your application targets ASP.NET 4. This installs and sets up ASP.NET. To download the installer *click here*.

- The Java Development Kit (JDK), version 1.6 (u27 or later) or version 1.7 (u05 or later), is required for compiling Java. The JDK is downloadable from *www.oracle.com*. After installing the JDK, you must put the `tools.jar` file for the JDK on your classpath, using a command similar to:

  ```
  set classpath=jdk-install-directory\lib\tools.jar
  ```

- A Web browser is required for Enterprise Server Administration in Enterprise Server.

  To use your Web browser offline, you need the dial-up networking feature of Windows installed. Otherwise you might have TCP/IP errors such as being unable find "localhost" or the numeric equivalent (127.0.0.1).

- To use Enterprise Server Administration, scripting or JavaScript support must be enabled in your browser. This is on by default in Internet Explorer in most Windows operating systems. Also, active content must be allowed and not blocked. To enable both these in Internet Explorer:

  1. Click **Tools** > **Internet Options**.
  2. On the **Security** tab, click **Custom Level**. In the **Scripting** section, under **Active Scripting**, click **Enable**.
  3. On the **Advanced** tab, scroll down the list to the **Security** section, and ensure the item **Allow active content to run in files on My Computer** is checked.

- Enterprise Server Help requires the Java Runtime Environment on some Windows systems to enable the Search facility to work.

  Important: This release requires version 10000.2.990 or later of the Micro Focus licensing software. For local servers, you do not need to install it separately, as the setup file installs a new Enterprise Developer client and a new licensing server on the same machine.

  If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus Licensing System Administration tool. To check the version of the license server on UNIX, run `/var/microfocuslicensing/bin/mfcesver` or `/var/microfocuslicensing/bin/cesadmintool.sh`.

  You can download the new version of the license server software from the Micro Focus SupportLine Web site: *http://supportline.microfocus.com*.

Additional Software Requirements

To ensure full functionality for some Enterprise Server features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the Enterprise Server setup file. The following information specifies the third-party software required for each feature.

Java Compilation

- The Java Development Kit (JDK), version 1.6 (u27 or later) or version 1.7 (u05 or later), is required for compiling Java. The JDK is downloadable from *www.oracle.com*. After installing the JDK, you must put the `tools.jar` file for the JDK on your classpath, using a command similar to:

  ```
  set classpath=jdk-install-directory\lib\tools.jar
  ```

Micro Focus Rumba

- On Windows 8, in order to install Micro Focus Rumba you must have the Microsoft .NET Framework 3.5 Service Pack 1 installed.

Database Access

Before you can use Enterprise Server to deploy SQL applications developed with OpenESQL, DB2 ECM, or COBSQL, ensure any third-party software prerequisites are installed and the environment is set properly. Refer to the your product help, **Welcome > Product Information > Installing... > System Requirements... > Additional Software Requirements > Database Access**, for details.

Java Development Kit (JDK)

The Java Development Kit (JDK) is required for compiling Java.

JDK or JRE is required for compiling and running COBOL JVM applications

After installing the JDK, you need to set up your Java environment.

Installing Enterprise Server for Windows

Downloading the Product

1. Use the download links in your Electronic Product Delivery email.

For more information follow the links for the installation instructions and the End User License Agreement.

Product Co-Existence

- Enterprise Server comes in the following versions:

  - Enterprise Server, which is the deployment server for applications built using Enterprise Developer for Visual Studio 2010 and Enterprise Developer for Eclipse.
  - Enterprise Server 2012, which is the deployment server for applications built using Enterprise Developer for Visual Studio 2012.

  You can only deploy applications to the version of Enterprise Server from the associated development product you used to build the applications. For example, if you built your application using Enterprise Developer for Visual Studio 2012 you must deploy the target files to Enterprise Server 2012.
- Enterprise Server and Enterprise Server 2012 cannot coexist on the same machine.

Installation Restrictions and Requirements

Before starting the installation, you should consider the following:

- If you are installing this as an upgrade, make sure that none of the product files are in use when you start the installation.
- You need to be logged in with a user-ID that has write access to the registry structure under HKEY_LOCAL_MACHINE, HKEY_CLASSES_ROOT, and HKEY_CURRENT_USER so the installation software can set the environment appropriately. You also need to be logged on with Administrator privileges.

- Before installing this product, make sure that any existing Micro Focus Directory Server (MFDS) or CCITCP2 Windows service (on Windows) or a process (on UNIX) from an existing product is stopped and uninstalled. On Windows, do this as follows:

1. Stop the MFDS and CCITCP2, using either the Windows Service Management Console GUI (`services.msc`) or from a command line prompt by typing:

   ```
   net stop mf_ccitcp2
   ```

   Only one instance of the MFDS or CCITCP2 service can run on a Windows machine.
2. Uninstall the MFDS or CCITCP2 service.

   For MFDS, from a command line prompt enter: `mfds -u`

   For CCITCP2: `ccitcp2 -u`

To run an earlier version of MFDS as a service after you have installed a later version:

1. Stop and uninstall the MFDS service, as described above.
2. Reinstall the earlier version, as follows:

   a. Open an Enterprise Server command prompt.
   b. Install the service. Enter the following command: `mfds -i`
   c. Start the service. Enter the following command: `net start mf_ccitcp2`

   Note: The two versions use different paths for environment and registry values, so the list of configured enterprise servers might be different depending on which version has been started, since, by default, different MFDS data repositories are used.

MFDS 5.1 and later are able to import or use Enterprise Server configuration data generated by earlier versions of MFDS, but 5.0 or earlier versions of MFDS might not be able to read data generated by later versions.

It is possible to run MFDS from a command prompt ("mfds") rather than as a service, but by default the "mfcobol" port is used (86) and this can only be used by one process at a time

Installing

These are the steps to install this product:

1. Run the `es2010_22.exe` file and follow the wizard instructions to install the prerequisite software and the product.

   Note: If you are installing Enterprise Server 2012, the file you need to use is `es2012_22.exe`.

   Note:
   - If you are installing onto a machine that has an existing Micro Focus product that uses an older Sentinel RMS License Manager, you might be prompted to remove it and install the Micro Focus License Administration. By doing this you maintain the existing Sentinel RMS license files while adding the Micro Focus License Administration. If you are unsure about existing licenses on your computer or removing the Sentinel RMS License Manager, consult your System Administrator. If you want to proceed, remove Sentinel RMS License Manager by using **Program and Features** (Windows Vista or later), and rerun the installation file.
   - Trial licenses cannot be used with remote desktop services. If you want to use your product in this way, please contact Micro Focus SupportLine to obtain a relevant license.
   - We recommend that you install any updates for the .NET Framework that are available at the *Microsoft Download* site.
   - If you install JDK you might be prompted to install the latest update. The latest update is not required for use with Enterprise Server but you can install it if you wish.

Installing as an Upgrade

This release will update an existing installation of Enterprise Server versions 2.1 or 2.1 Update 1.

Before installing, check *Installation Restrictions and Requirements*.

Enterprise Server Installation Options

To install Enterprise Server you run `es2010_22.exe` which contains a number of product `.msi` files (Windows Installer packages). When run, `es2010_22.exe` performs some initial system checks then sequentially installs the `.msi` files.

> ✎ **Note:** The name of the installable executable in this document is always the name of the executable for Enterprise Server - this is `es2010_22.exe` for Enterprise Server and `es2012_22.exe` for Enterprise Server 2012.

`es2010_22.exe` can take a number of parameters, enabling you to specify a number of different types of installation:

* Standard Installation

    Format:
    `es2010_22.exe`
    Summary:
    Full installation including License Manager and Enterprise Server. During installation you can specify options including the location to which the components are installed.
* Non-interactive Installation

    Format:
    `es2010_22.exe /passive`
    Summary:
    Full installation, but the components are installed non-interactively using default options and directories.
* Silent Installation

    Format:
    `es2010_22.exe /q`
    Summary:
    Full installation, but the components are installed non-interactively with no user interface, using default options and directories.
* Modified Silent Installation

    Format:
    `es2010_22.exe /q InstallFolder=d:\cobolrts`
    Summary:
    Full installation, but the components are installed non-interactively with no user interface, and Enterprise Server is installed to `d:\cobolrts`.

To see what parameters you can use, execute the following from the command line: `es2010_22.exe /?`.

> ✎ **Note:**
>
> * Log files that are created during installation are saved in the folder specified by the TEMP environment variable. To change the location or name of the files, use the /log parameter on your setup command line and specify the path and file name, for example: `filename /log d:\temp \log.txt`. This creates a log file, named `log.txt`, in the `d:\temp` directory.

After Installing

To open the help on versions of Windows 7 and earlier, select **Start > All Programs > Micro Focus Enterprise Server > Documentation** from the Windows Taskbar.

On Windows 8, right-click at the bottom of the Start screen, and click **All apps** to display all available links for this product. In the Enterprise Server section, click **Documentation**.

This starts the documentation for Enterprise Server in the online Micro Focus Infocenter. From the left hand pane, select **Enterprise > Micro Focus Enterprise Server**.

Note: For applications created with earlier Micro Focus products or earlier versions of Enterprise Developer, note the following:

Database Access	Managed applications using SQL(DBMAN=ODBC) that were compiled in Enterprise Developer 2.1 Update 1 must be recompiled in Enterprise Developer 2.2.
Existing Applications	Application executables that were compiled using earlier Micro Focus products must be recompiled from the sources using Enterprise Developer. For more information, read the section *Upgrading to Enterprise Developer for Visual Studio 2010* in the product Help.

Repairing

If any product files, registry settings or shortcuts are accidentally removed at any point, you can perform a repair on the installation to replace them.

To repair your installation on versions of Windows Vista or later:

1. From the **Control Panel**, click **Uninstall a program** under **Programs**.
2. Right-click your Micro Focus product and select **Repair**.

Uninstalling

To uninstall the product, you cannot simply delete its files from your hard disk. To uninstall the product:

1. Log in with the same user-ID as you used when you installed the product.
2. Click **Uninstall a program** under **Programs** in **Control Panel**.
3. Select the product and click **Remove** or **Uninstall** as appropriate.

When you uninstall, the only files deleted are those that the installation software installed. If the product directory has not been removed, delete any unwanted files and subdirectories within it using Windows Explorer.

Important: The installer creates separate installations for Micro Focus Enterprise Server and Micro Focus License Administration. Uninstalling only Enterprise Server does not automatically uninstall the Micro Focus License Administration or any of the prerequisite software.

To completely remove the product you must uninstall the Micro Focus License Administration as well.

You can optionally remove the prerequisite software. For instructions, check the documentation of the respective software vendor.

To silently uninstall the product, you need the setup file and you need to execute the following at the command line:

```
start /wait install-file.exe /quiet /uninstall
```

Installing on UNIX

System Requirements for Enterprise Server for UNIX

Hardware Requirements

The disk space requirements are approximately:

Platform	Enterprise Server (MB)	Sentinel RMS license server (MB)
POWER running AIX	315	26
HP IA	726	54
System Z running Red Hat Linux	267	28
x86-64 running Red Hat Linux	282	33
SPARC running Solaris	330	31
x86-64 running Solaris	297	23
System Z running SuSE SLES	271	28
x86-64 running SuSE SLES	287	33

Note: The installation requires extra disk space that equals the size of the product you install.

Operating Systems Supported

- POWER running AIX 6.1 TL7 SP5/7.1 TL1 SP5 - 32/64-bit
- x86-64 running Red Hat Linux 5.5/5.8/5.9/6.3/6.4, Oracle Linux 6.3 with Red Hat Kernel compatibility mode, Oracle Linux 6.3 with Unbreakable Enterprise Kernel - 32/64-bit
- SPARC running Solaris 10/11/11.1 - 32/64-bit
- x86-64 running SuSE SLES 11/11 SP2/11 SP3 - 32/64-bit
- System Z running SuSE SLES 11 SP2/11 SP3 - 32/64-bit
- System Z running Red Hat Linux 6.2/6.3- 32/64-bit
- HP IA 11.31 - 32/64-bit

Software Requirements

Before installing this product, you must have the following software installed on your computer:

- The Korn shell is required for the licensing daemon. After the installation, if the licensing daemon does not start, check and ensure the Korn shell is installed and then run the `/var/microfocuslicensing/bin/startmfcesd.sh` script to start the daemon.
- The pax archiving utility is required by the setup file. Pax is distributed with most UNIX/Linux systems but, if it is missing, you must install it separately. To verify pax is installed, run `pax --help` or `pax --version` at the command line.
- On Red Hat 6.*x*, you must have the following operating system libraries installed:

  glibc-*.x86_64
  glibc-*.i686
  libgcc-*.x86_64
  libgcc-*.i686

  Visit the *Red Hat Web site* for more information.

Important: This release requires version 10000.2.990 or later of the Micro Focus licensing software. For local servers, you do not need to install it separately, as the setup file installs a new Enterprise Developer client and a new licensing server on the same machine.

If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus Licensing System Administration tool. To check the version of the license server on UNIX, run `/var/microfocuslicensing/bin/mfcesver` or `/var/microfocuslicensing/bin/cesadmintool.sh`.

You can download the new version of the license server software from the Micro Focus SupportLine Web site: *http://supportline.microfocus.com*.

Before you start the installation, you need to set the environment as follows:

- You need to set the LANG environment variable to pick up localized messages. The LANG settings are English and Japanese only.
- The Java Development Kit (JDK) is required for compiling Java. The JDK is downloadable from *www.oracle.com*. After installing the JDK, you must put the tools.jar file for the JDK on your classpath, using a command similar to:

```
set classpath=jdk-install-directory\lib\tools.jar
```

- JavaScript or scripting support must be enabled in your browser, so that Enterprise Server Administration is usable. Also, active content must be allowed and not blocked.

Additional Software Requirements

To ensure full functionality for some Enterprise Server features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the Enterprise Server setup file. The following information specifies the third-party software required for each feature.

Java Compilation

- The Java Development Kit (JDK), version 1.6 (u27 or later) or version 1.7 (u05 or later), is required for compiling Java. The JDK is downloadable from *www.oracle.com*. After installing the JDK, you must put the `tools.jar` file for the JDK on your classpath, using a command similar to:

```
set classpath=jdk-install-directory\lib\tools.jar
```

Micro Focus Rumba

- On Windows 8, in order to install Micro Focus Rumba you must have the Microsoft .NET Framework 3.5 Service Pack 1 installed.

Database Access

Before you can use Enterprise Server to deploy SQL applications developed with OpenESQL, DB2 ECM, or COBSQL, ensure any third-party software prerequisites are installed and the environment is set properly. Refer to the your product help, **Welcome > Product Information > Installing... > System Requirements... > Additional Software Requirements > Database Access**, for details.

Java Development Kit (JDK)

The Java Development Kit (JDK) is required for compiling Java.

JDK or JRE is required for compiling and running COBOL JVM applications

After installing the JDK, you need to set up your Java environment.

Installing Enterprise Server for UNIX

Downloading the Product

1. Use the download links in your Electronic Product Delivery email.

For more information follow the links for the installation instructions and the End User License Agreement.

Installing

> **Note:**
>
> During the installation process, the installer configures the product's Enterprise Server System Administrator Process User ID. The Process User ID will be the owner of all Enterprise Server processes except the one for the Micro Focus Directory Server (MFDS). The Directory Server process (Enterprise Server Administration) runs as root as this allows it to access the system files and ports.
>
> All Enterprise Server processes you start from Enterprise Server Administration run under the Process User ID which can affects the file access and creation.
>
> By default, the installer uses the login id of the user that runs the installer for the Process User ID. To change the user id after you complete the installation, execute `$COBDIR/bin/casperm.sh`.

These are the steps to install this product:

1. Give execute permissions to the setup file:
   ```
   chmod +x setup_ent_server_2.2_platform
   ```
2. Run the installer with superuser permissions:
   ```
   ./setup_ent_server_2.2_platform
   ```

   If you don't run this as superuser, you are prompted to enter the superuser password during the install.

   If you set COBDIR to an already installed product, the installer will back up the existing installation and will install this release in the location COBDIR points to. If COBDIR is not set, the installer does a fresh install.

   The COBOL environment is installed by default into `/opt/microfocus/product-name`, (COBDIR).

   To install in a different location use the `-installlocation="Location"` parameter to specify an alternative directory location. For example:
   ```
   ./setup_ent_server_2.2_platform -installlocation="full path of new location"
   ```

   > **Note:** You can use variables or the tilde syntax for the path for `-installlocation`. For example, the following examples are equivalent:
   > ```
   > -installlocation="/home/myid/installdir"
   > ```
   > ```
   > -installlocation="~myid/installdir"
   > ```
   > ```
   > -installlocation="~/installdir"
   > ```
   > ```
   > -installlocation="$HOME/installdir"
   > ```

   You can see details about which additional parameters can be passed to the install script if you enter the `-help` option.

   You can use the following options to configure the Enterprise Server installation: `[ -ESsysLog="location" ] [ -ESadminID="User ID" ] [ -CASrtDir="location" ]`, where:

-ESsysLog	Specifies a location in which the build will create the Enterprise Server System log file - for example, `-ESsysLog="/home/esuser/logs"`. The default location is `/var/mfcobol/logs`.
-ESadminID	Sets the Enterprise Server System Administrator Process User ID from the command line - for example, `-EDadminID="esadm"`. The default user ID is the one that runs the installer.

-CASrtDir	Specifies the location were the Enterprise Server run-time system files are placed - for example, `-CASrtDir="/home/esuser/casrt/es"`. The default location is `/var/mfcobol/es`.

✏️ **Note:**

- The installation of this product could affect the SafeNet Sentinel licensed components running on your machine. During installation licensing is shutdown to allow files to be updated. To ensure the processes running on your machine are not affected, you need to use the `-skipsafenet` option, which skips the installation of SafeNet:

  ```
  ./setup_ent_server_2.2_platform -skipsafenet
  ```

- To protect the SafeNet Sentinel installation from accidental updating you can create an empty file named `SKIP_SAFENET_INSTALL` in `/var/microfocuslicensing/` as follows:

  ```
  touch /var/microfocuslicensing/SKIP_SAFENET_INSTALL
  ```

  While the file is present, the SafeNet installer does not make changes to the installation or shutdown the running license daemons. If licensing needs to be updated later, remove the file and install Sentinel RMS server manually.

After Installing

When you have installed the product, you need to set the environment as described below.

1. To set up your product, execute:

   ```
   . /opt/microfocus/EnterpriseDeveloper/bin/cobsetenv
   ```
2. To verify that your product is installed, execute:

   ```
   cob -V
   ```

⚠️ **Important:** These commands set the environment only for the current shell. You need to execute them for each new shell that you start.

To avoid having to run `cobsetenv` for every shell, add these commands to the shell initialization files (such as `etc/profile`, `etc/bashrc`).

Note that `cobsetenv` is only compatible with POSIX-like shells, such as bash, ksh, or XPG4 sh. It is not compatible with C-shell or pre-XPG4 Bourne shell.

Installing Silently

You can install Micro Focus products silently by using command line parameters to specify the installation directory, user information, and which features to install.

You can use the following command line arguments to install silently on UNIX/Linux:

```
-silent -IacceptEULA
```

For example, execute:

```
setup_filename -silent -IacceptEULA
```

UNIX Installer Issues

Licensing Daemon	If the Korn shell is not installed on your machine when you run the installer, the licensing daemon will not be started. To resolve this after you install the product, install the Korn shell and then run the `/var/microfocuslicensing/bin/startmfcesd.sh` script to start the daemon.
License Infrastructure Installer	On some Solaris platforms, you can receive the following error message when SafeNet license server needs to be installed or upgraded on your machine: `tar: /safenet.tar: No such file or directory`

To resolve this issue, wait for the installation to complete and then perform the following:

1. Navigate to the `safenet` directory in the COBDIR location.
2. With superuser permissions execute: `./MFLicenseServerInstall.sh`

License Server You need to configure the computer hostname to ensure the license server will start properly.

To avoid performance issues, "localhost" and the computer hostname must not both be mapped to IP address 127.0.0.1. You should only map "localhost" to IP address 127.0.0.1.

The following is an example of how to specify these entries correctly in the `etc/hosts` file:

```
127.0.0.1 localhost.localdomain localhost
IP machinelonghostname machineshorthostname
```

where *IP* is the unique IP address of the computer in xx.xx.xx.xx format.

Repairing

If a file in the installation of the product becomes corrupt, or is missing, we recommend that you reinstall the product.

Uninstalling

Note: Before you uninstall the product, ensure that the Enterprise Server instances and the Micro Focus Directory Service (MFDS) are stopped.

To uninstall this product:

1. Execute as root the `Uninstall_EnterpriseDeveloper2.2.sh` script in the `$COBDIR/bin` directory.

Note: The installer creates separate installations for the product and for Micro Focus License Administration. Uninstalling the product does not automatically uninstall the Micro Focus License Administration or the prerequisite software. To completely remove the product you must uninstall the Micro Focus License Administration as well.

To uninstall Micro Focus License Administration:

1. Execute as root the `UnInstallMFLicenseServer.sh` script in the `/var/microfocuslicensing/bin` directory.

The script does not remove some of the files as they contain certain system settings or licenses.

You can optionally remove the prerequisite software. For instructions, check the documentation of the respective software vendor.

Licensing Information

> 🖉 **Note:**
> - This release uses the authorization code for the Enterprise Server 2.0 release.
> - If you are unsure about what your licensing policy is or what sort of license you require, consult your System Administrator or Micro Focus SupportLine to obtain a valid license.

To start Micro Focus License Administration

From the Windows Taskbar click **Start** > **All Programs** >**Micro Focus License Manager** > **License Administration**.

> 🖉 **Note:** On Windows 8 and Windows Server 2012, you use the Start screen to invoke programs.

Log on as root, and from a command prompt type:

```
/var/microfocuslicensing/bin/cesadmintool.sh
```

Installing licenses

If you have a license file

1. Start Micro Focus License Administration.
2. Click the **Install** tab.
3. Do one of the following:

    - Click **Browse** next to the **License file** field and select the license file (which has an extension of `.mflic`).
    - Drag and drop the license file from Windows Explorer to the **License file** field.
    - Open the license file in a text editor, such as Notepad, then copy and paste the contents of the file into the box below the **License file** field.
4. Click **Install Licenses**.

1. Start the Micro Focus License Administration tool and select the **Manual License Installation** option by entering `4`.
2. Enter the name and location of the license file.

If you have an authorization code

Authorizing your product when you have an Internet connection

🖊 **Note:** This topic only applies if you have an authorization code.

The following procedure describes how to authorize your product using a local or network license server. The license server is set up automatically when you first install the product.

1. Start Micro Focus License Administration.
2. Click the **Install** tab.
3. Type the authorization code in the **Enter authorization code** field.
4. Click **Authorize**.

If you change the name of the machine running your license server after it has granted licenses, the licenses stop working.

1. Start Micro Focus License Administration.
2. Select the **Online Authorization** option by entering 1 and pressing **Enter**.
3. Enter your authorization code at the **Authorization Code** prompt and then press **Enter**

Authorizing your product when you don't have an Internet connection

🖊 **Note:** This topic only applies if you have an authorization code.

This method of authorization is required if your machine does not have an Internet connection or if normal (automatic) authorization fails.

1. Start Micro Focus License Administration.
2. Click **Manual Authorization** on the Install page.
3. Make a note of the contents of the **Machine ID** field. You will need this later.
4. Do one of the following:

   - If your machine has an Internet connection, click the SupportLine Web link in the Manual Authorization Information window.
   - If your machine does not have an Internet connection, make a note of the Web address and type it into a Web browser on a machine that has an Internet connection.

   The Micro Focus SupportLine Manual product authorization Web page is displayed.
5. Type the authorization code in the **Authorization Code** field. The authorization code is a 16-character alphanumeric string supplied when you purchased your product.
6. Type the Machine ID in the **Machine ID** field.
7. Type your email address in the **Email Address** field.
8. Click **Generate**.
9. Copy the generated license string (or copy it from the email) and paste it into the box under the **License file** field on the Install page.
10. Click **Install Licenses**.

In order to authorize your product you must have the following:

- Your authorization code (a 16-character alphanumeric string).
- The machine ID. To get this, start the Micro Focus License Administration tool and select the **Get Machine Id** option by inputting 6. Make a note of the "Old machine ID".

If you have previously received the licenses and put them in a text file, skip to step 6.

1. Open the Micro Focus license activation web page *http://supportline.microfocus.com/activation* in a browser.
2. Enter your authorization code and old machine ID and, optionally, your email address in the **Email Address** field.
3. Click **Generate**.
4. Copy the licenses strings from the web page or the email you receive into a file.
5. Put the license file onto your target machine.
6. Start the Micro Focus License Administration tool and select the **Manual License Installation** option by inputting 4.
7. Enter the name and location of the license file.

New Features in Enterprise Server 2.2

File Handling

New features include:

- The DATEDIFF function as part of the DFSORT emulation. There are some limitations of its use.
- Converting and editing Vision and RM/COBOL indexed data files using the Data File tools.
- Access to data files (either sequential or indexed) through AcuServer.
- Access to Vision and RM/COBOL indexed data files through Enterprise Server.

IMS

Database recovery	IMS database recovery using the new IMS Database Forward Recovery and Rollback Recovery features is available. These consist of a set of backup and restore utilities that enable you to restore your IMS database complete with the most recent updates.
Locking improvements	Internal Resource Lock Manager (IRLM) support has been added to provide more granular locking capabilities, allowing for increased sharing and decreased contention and deadlock risk.

Mainframe Subsystem Support

JCL System Catalog	You can now use in-stream data for DDs within JCL procedures. This change is to maintain compatibility with mainframe JCL processing which recently introduced the same change.
JCL Public Catalog API	You can now access and update JES Catalog information.
CICS External Call Interface (ECI)	Micro Focus proprietary support for the CICS External Call Interface (ECI) has been enhanced. ECI uses the Micro Focus BINP protocol, thus eliminating the need for third-party middleware. Additional features include support for extended LUW (logical unit of work) and new support for Java clients. For more information, see *IBM External Call Interface (ECI) and External Presentation Interface (EPI).*

Managed COBOL

Named and optional parameters	Two new types of parameter have been introduced for use during method invocation:	
	Named parameters	As part of the invocation expression, you can define a value for a parameter named in the method definition. The named argument must be specified after any positional arguments, and must not correspond to any of those preceding arguments.
	Optional parameters	Optional parameters are parameters defined with a default value in the procedure division header of the invoked method. If none of the arguments passed in during invocation correspond to this parameter, the default value is used in the method; if an argument does correspond, the value that was passed in is used.

| **Delegates and events** | A number of new features have been added that relate to delegates and events: |

> ✏️ **Note:** Some of these features were also available in previous versions of Enterprise Developer.

The ATTACH and DETACH statements	Use these statements to attach or detach a delegate, method group or an anonymous method to or from an event.
The RUN statement	Use this statement to invoke a delegate once it has been created.
Combining delegates	Use the '+' operator to add a method group, anonymous method or another delegate to a delegate, and use the '-' operator to remove a method or another delegate from a delegate.
Method groups conversions	Use the METHOD keyword to specify a compatible method from a method group, and convert it to a delegate.

PL/I support

- EBCDIC support
- Support for XML (using XMLCHAR, PLISAXA, PLISAXB, and PLISAXC)
- Preprocessor support for programs written using EXEC DLI
- Support for PL/I programs running MQ Series
- Support for Open PL/I programs running as DB2 stored procedures

SQL

EXEC SQL GET DIAGNOSTICS Statement	Enables you to get diagnostic information for the last OpenESQL statement executed.
OPTION compiler directive option	New parameters have been added to handle additional host variable types.
XA switch modules	This release includes support for XA switch modules that enable CICS- and JES-initiated transactions to run under Microsoft SQL Server using different user credentials than those specified within the XA open string.

Known Issues

Refer to the *Known Errors and Restrictions* topic in the *Product Information* section of your product Help.

In addition, note the following:

AcuCOBOL File Handler
When using an interface of ACUFH other than MSSQL, you may experience a file operation delay when the interface fails to connect to a database. This failed connection also results in a memory leak. Set the environment variable MSSQL_DETACH to 1 to avoid both issues.

ASP.NET
It is not possible to run ASP.NET Web Sites or Web Services on a production machine (one that has Micro Focus Enterprise Server installed) without an additional setup. This is because the production machine does not contain development tools such as the COBOL Compiler. To workaround this, you need to do the following steps:

1. Precompile the site before you deploy it using the **Publish Web Site** command in Visual Studio.
2. Edit the `.asmx` file of the Web service project or the `.aspx` file of the Web site and delete the `Language="COBOL"` statement.
3. Edit the `Web.config` file with a text editor and delete the line which contains:
   `<compiler language="COBOL"...`
4. Ensure that a .NET Server license is installed using Apptrack.

CICS
- An EXEC CICS DELAY statement may sometimes produce a difference of one second.

Enterprise Server
- The Historical Statistics Facility may generate incorrect records for SSTM-enabled enterprise servers.

ICETOOL Emulation
ICETOOL emulation for managed code is not available in this release.

Installation
- On UNIX, check *UNIX Installer Issues* before you start the installation.
- If you are using the latest version of Java 1.7 on Linux, you might receive some warnings when you start this product. To resolve the issue, it is recommended that you install an earlier version of Java 1.7 and set JAVA_HOME to that.

JCL VSE
When running Enterprise Server applications on HP Itanium in 32-bit mode, if you receive an error such as "CASCD1057S JES Initiator for Server ... abended by signal 00004", you need to set the environment value COBMAINSTACK to a value greater than 500000 to increase the default stack size.

Micro Focus Rumba
On versions of Windows Vista and later, Enterprise Server listens only on the IPv4 loopback address (127.0.0.1). As a result, an attempt to connect to localhost with a TN3270 emulator such as Micro Focus Rumba may fail. To work around this issue, in your emulator's configuration use 127.0.0.1 in preference to localhost or your host machine's name.

Resource Adapters
Trying to deploy the local resource adaptor `mfcobol-localtx.rar` to WebLogic may fail with a ClassCastException. To work around this issue, you need to deploy `mfcobol-xa.rar` first, then need to undeploy this file and deploy the local one, `mfcobol-localtx.rar`. If there are issues deploying using the WebLogic GUI, you

can use the command line. If there are issues with this as well, try reducing the length of the command (for example, by moving the file to a location with a shorter path).

Significant Changes in Behavior or Usage

This section describes significant changes in behavior or usage. These changes could potentially affect the behavior of existing applications or impact the way the tools are used.

The numbers that follow each issue are the Support Incident Numbers followed by the Reported Problem Incident (RPI) number (in parentheses).

- *.NET Compiler*
- *ASM Compiler: HLL Macro Assembler*
- *CAS (COBOL App Server) General*
- *CCI Session Layer Code*
- *Compiler*
- *File Handling - Sort / JCL Sort*
- *JCL System Catalog - Dataset Allocation*
- *MF Directory Server*
- *MF Server Administrator (GUI)*
- *MFBSI*
- *MTO - IMS Other*
- *MTO - JCL MVS*
- *MTO - JCL System Catalog*
- *Open PL/I Compiler*
- *Open PL/I Debugger*
- *Open PL/I RTS*
- *Request Handler*

.NET Compiler

Back to the list

- The use of ILSMARTLINKAGE in sub-programs is now working correctly. In previous versions, if it was specified in a sub-program, a dynamic call of that program from another program could cause execution failure.

  2608825 (1087435)
- In managed code, the statement DISPLAY UPON SYSERR now behaves as expected. Previously, it was behaving the same as DISPLAY UPON CONSOLE.

  2589053 (1085576)
- When the PROPERTY keyword is used on a numeric edited field, the SET method now works correctly when the program specifies DECIMAL POINT IS COMMA.

  2588508 (1085560)

ASM Compiler: HLL Macro Assembler

Back to the list

- A "." (dot) specification is no longer ignored in the SYSIN environment variable or in the mf370ctl.cfg file when used to specify an output directory, and indicates the current directory. This is a change in behavior from Mainframe Express, where the "." (dot) character in the SYSIN environment variable or in the mf370ctl.cfg file is still ignored and assembler output files are placed in the directory specified by the SYSIN environment variable.
- Assembler Build Output will now be sent to the location specified in the COBOL output path project setting. Previously, all Assembler build output went to the project directory.

CAS (COBOL App Server) General

- Previously, on cancelling an active JCL job on UNIX (after you have used STOP on the ESMAC > SEPs page to stop the INITIATOR that it is running in), the INITIATOR was terminated and a new one was restarted in its place. Now, the new INITIATOR will not be started, as the STOP request was received before the CANCEL.

  2559087 (1084226)

CCI Session Layer Code

- A new option, use_global_namespace, is available for the cci.ini file in the Windows %SystemRoot% folder. If use_global_namespace is set, all the ccishared memory objects are created in a system-wide address space, and the applications hosted by different users, including system services, can communicate. To use this facility, edit the cci.ini file and ensure use_global_namespace is set to "yes". [ccismem-base] # Allow interaction between users on a # single system. Using this option reduces security as # all users will have access to the same name space. use_global_namespace=yes If the value of this option is anything other than "yes", or if the option is missing, no change is made to the existing behavior.

  2195519 (1062800)

Compiler

- The default for the NSYMBOL directive under DIALECT(ENTCOBOL) has been changed to NSYMBOL(NATIONAL) to emulate the equivalent IBM default.

  2657471 (1090355)
- To improve RM/COBOL and ACUCOBOL compatibility, the SIGN clause at a group level is no longer applied to non-DISPLAY usage signed numeric data items within the group, just as it is not applied to unsigned numeric data items and non-numeric data items within the group.

  2549904 (1082171)
- Previously, even though no code was generated, the Compiler allowed the ON EXCEPTION and NOT ON EXCEPTION phrases in the DISPLAY statement in formats that do not allow these phrases. As a result, if the DISPLAY statement was in the ON EXCEPTION phrase of another statement, the NOT ON EXCEPTION phrase would bind incorrectly with the DISPLAY statement instead of with the intended containing statement - for example, ACCEPT or CALL.

File Handling - Sort / JCL Sort

- When used with MFJSSTRICTSORT=ON, MFJSORT now errors (return code 16) if the input RECFM is different to a SORTOUT RECFM. It also errors if the input RECFM is different to an OUTFIL RECFM when FTOV or VTOF/CONVERT has not been specified.

  2643384 (1088993)

JCL System Catalog - Dataset Allocation

- The default for previous releases was to create a catalog entry with no physical file until data was actually written to the catalog. Now, a PC file is allocated for non-VSAM files by default. You can emulate the previous behavior if you set the environment variable MFALLOC_PCFILE to N.

MF Directory Server

- The mfds command line option for exporting registered Enterprise Server definitions to an XML file now supports the "*" option. This exports all registered servers rather than a specified server. Multiple server definitions are now exported into the target directory and saved into a file with the default name ALLSERVERS.xml. The import option now also supports the import of multiple server definitions from a single XML file.

  2641890 (1088838)

- mdump now supports a new option, -e, to help you query the Security Manager configuration details. The possible values of the option are: "1" - shows security configuration that applies to any returned enterprise servers; "2" - shows security configuration for MFDS and the default Enterprise Server security configuration. This requires MFDS version 1.15.00 or higher; "3" - returns the properties of all configured external Security Managers.

  2487164 (1081693)

MF Server Administrator (GUI)

- When adding a user to an external security manager, you can now include a password expiry time in the Advanced Configuration section of the Add New User wizard in Enterprise Server Administration. The field value is specified using generalized time format (YYYYMMDDHHMMSS.0Z), and can be used by the MLDAP ESM for calculating whether a user's password has expired and requires updating. This value may only be specified using this page when adding a user. You need to use an external directory services configuration tool to edit it.

  2562118 (1083203)

MFBSI

- casout now correctly sets return-code to the job status for the sysout retrieval when the file is less than 65K. Also, MFBSI now considers return codes of 0, 7 or 8 to be successful for JESYSMSG retrieval where, previously, it only considered 0 as successful.

  2655482 (1090444)

MTO - IMS Other

- The DBDCPY, MFSCPY, and PSBCPY environment variables are no longer required and have been deprecated. Use the IMSCPY environment variable to specify copybook locations.

MTO - JCL MVS

- Empty values for the USER or NOTIFY parameters on the JCL JOB card no longer cause an error when parsing the JCL.

  2646770 (1089380)

- The disposition processing of PASSed datasets has been revised to be consistent with mainframe processing. Particularly, received datasets are removed at the end-of-step processing, unless they are to be passed on to another step in the job. Any passed datasets that were not received at the end of the job may be removed if they conform to the mainframe conditions for this.

  2610362 (1087601)

MTO - JCL System Catalog

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- The value for the JCL DD UNIT=device parameter is now stored in the system catalog entry for the dataset.

  2619050 (1089095)

Open PL/I Compiler

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- If using the -cics, -ims, or -mvs options when compiling with mfplx on a little endian platform, the possibility for errors existed. Starting with Enterprise Developer 2.2, using the -cics, -ims, or -mvs options when compiling with mfplx automatically also uses -bigendian, thereby eliminating the possibility for these errors. Evaluate any applications that were built with a prior release to determine any impact on any data files being used.

Open PL/I Debugger

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- CodeWatch no longer attempts to use an incorrect directory when starting. Also, CodeWatch is now the default debugger when no other debugger is specified, and is the only debugger available when using -optexec plitest.

  2655906 (1090193)
- Support for the evaluation of X, NX, Z, A, and E constants nas been added to CodeWatch.

Open PL/I RTS

Back to the list

- A problem with possible truncation or trailing zeroes within PICTURE assignments has been fixed. As the fix depends on changes to both the Compiler and the run-time, you must perform a complete rebuild of all your source code (recompile and relink) in order to apply it.

  2662261 (1090768)
- Previously, when taking a PLIDUMP, if the .PDB file needed for a PLIDUMP was not in the same directory as the .DLL and the .STB files, and they were not in the first CAS_BATCH_PATH subdirectory, then the PLIDUMP was not successfully generated and an S0C4 abend could occur.

  2615412 (1090483)
- The Open PL/I debugger no longer loses its place and behaves erraticly when debugging code containing the same PL/I macro multiple times within the same source routine, even if the -nodebuginfo and -pp options are not specified.

  2612530 (1087809)

Request Handler

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- A problem that caused BIS to create log files in a directory named C:\ProgramData\AcuCorp\BIS \LogFiles was fixed. BIS no longer creates log files unless specified and the BIS logging service is now disabled by default. To enable it, you need to use the following global environment variable: BIS_LOG=[OFF | ON | <directory>] Where the values are:
  - OFF - disables logging (the same as if BIS_LOG is not specified or is left blank)
  - ON - enables logging and directs the log files into the default location, which must not be read-only.
  - <directory> - enables logging and directs the log files into the specified directory. The user must ensure that the BIS request handler has write rights for this directory. The directory must be an

absolute path or network path. If the specified directory does not exist, BIS will attempt to create it. The containing directory must exist.

The BIS_LOG variable is only examined when the BIS application pool is started or recycled. After setting or changing BIS_LOG, IIS must be restarted in order for the variable to take effect.

Resolved Issues

The numbers that follow each issue are the Support Incident Numbers followed by the Reported Problem Incident (RPI) number (in parentheses).

- *.NET Compiler*
- *.NET ESQL Support*
- *.NET JCL (General)*
- *.NET RTS*
- *Adis*
- *ASM Compiler: HLL Macro Assembler*
- *CAS (COBOL App Server) General*
- *CAS Security*
- *CAS XA Switch modules*
- *CCI TCP/IP*
- *Compiler*
- *CICS: Problems not classed above*
- *Cob/Cbllink/Cblnames (32-bit PC)*
- *Documentation*
- *File Handling - External File Handler*
- *File Handling - Fileshare*
- *File Handling - Sort / JCL Sort*
- *JVM - Compiler*
- *JVM - RTS*
- *Macro Preprocessor*
- *MF Common Client*
- *MF Communications Server*
- *MF Directory Server*
- *MFA: GUI components*
- *MFA: Mainframe*
- *MFBSI*
- *MTO - CICS BMS Screen painter*
- *MTO - CICS ECM/Preprocessor/Translator*
- *MTO - CICS Emulation*
- *MTO - CICS ESMAC*
- *MTO - CICS Utilities*
- *MTO - IMS DB*
- *MTO - IMS ESMAC*
- *MTO - IMS TM*
- *MTO - IMS Utils*
- *MTO - JCL ESMAC*
- *MTO - JCL MVS*
- *MTO - JCL System Catalog*
- *MTO - JCL TSO*
- *MTO - JCL Utils*
- *MTO - JCL Utils - IDCAMS*
- *MVS REXX Emulation*

.NET Compiler

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- It is now possible to query data items during debugging for programs containing multiple entry points, compiled with the directive PERFORMTYPE"OSVS".

  2663738 (1090935)
- The correct calling conventions are now used for programs that have multiple platform invokes with different calling conventions.

  2660948 (1090751)
- Accessing an ILSMARTLINKAGE class built for a group containing an OCCURS DEPENDING ON item no longer causes unexpected results, as it now uses the maximum length for the OCCURS DEPENDING ON item within the property access methods for the group.

  2654127 (1090119)
- A SEARCH statement where the table name contains DBCS characters now compiles to managed code successfully.

  2652827 (1089896)
- When compiling managed COBOL, a move from an alphanumeric field to a numeric property no longer causes an error. (This was an error that was introduced in Enterprise Developer 2.1 update 1.)

  2651658 (1089833)
- Incorrect code is no longer produced when creating WCF services.

  2649616 (1089641)
- 'Illegal format: literal' errors are no longer generated when building and running a website.

  2645733 (1089290)
- Incorrect control flow no longer occurs when an EXIT PROGRAM statement is in a paragraph by itself, and that paragraph is performed from elsewhere in the program. Previously, this could result in the EXIT PROGRAM being ignored.

  2642765 (1089164)
- When debugging .NET COBOL on a 64-bit system, the result field is now updated correctly when you step over a divide operation.

  2642169 (1088841)
- Previously, if a .NET managed program called a C++ method, where one of the parameters was marked with the IsLong modifier, the code failed at run time with a "method not found" error.

2615417 (1088095)

- The Form Designer is now working correctly when PIC 1 data items containing boolean literal values are inserted into a working-storage section associated with a Windows form.

2612621 (1087910)

- Previously, when a callfh directive targeted a method expecting more than the normal two parameters, you received a system error at compile time.

2611093 (1087662)

- Stepping over an IF statement while debugging now works as expected. Previously, it could leave the cursor pointing at the first statement following the IF, even though the associated conditional expression evaluated to false.

2610824 (1087679)

- A new directive, ILSHOWPERFORMOVERLAP, which identifies those procedures that form part of an overlapping perform range is now available.

2607319 (1087299)

- The ATTACH and DETACH statements no longer produce compiler errors when referencing an event declared in a different class.

2604429 (1086973)

- A SORT statement used in an object method, where the program did not have OBJECT/END OBJECT markers, could result in an "index out-of-range" exception at run time.

2596409 (1086418)

- In managed code, some COBOL numeric fields are now optimised to 32-bit or to 64-bit binary fields, regardless of their definition in the COBOL source. This means that fields defined as DISPLAY or COMP-3, for instance, which do not form a part of a group, may be stored as binary fields. The Compiler inserts the required code to make the behavior of these fields the same as if they had not been optimised.

2595775 (1086432)

- In .NET COBOL, when HOSTNUMCOMPARE is specified, a numeric item containing a level 88 with multiple values no longer produces invalid code.

2595331 (1086088)

- The use of EXTERNAL files in class programs compiled for managed code no longer leads to invalid code generation.

2595177 (1086071)

- When defining a field using the syntax: 01 s1 type String. an EVALUATE statement using the field as the subject now executes the correct control flow.

2594906 (1086055)

- The use of host variables defined as type DateTime no longer produce spurious compiler errors.

2594156 (1085997)

- An error that could cause a MissingMethodException for managed programs compiled with charset(ebcdic) has been fixed.
- When a COMPUTE target had more than 18 significant digits and the COMPUTE expression included division, the decimal scaling could be lost, producing incorrect results.
- The error reporting for forward references and ambiguous references has been enhanced.
- In managed COBOL, a statement of the form "set string-type to interface-type", where string-type is an item of type string and interface-type is an item of some interface type, was producing invalid code.
- Spurious errors relating to indexed file keys are no longer produced as a result of using implicit local declaration.

.NET ESQL Support

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- Previously, OpenESQL incorrectly handles Oracle NOWAIT, WAIT n and SKIP LOCKED cursor options when SQL(TARGETDB) was set to ORACLE.

  2649989 (1089640)
- The OpenESQL preprocessor now accepts SQL(DATE=ODBC) and SQL(TIME=ODBC).

  2641087 (1088749)
- The behavior of various cursor types in different usage scenarios is now documented, showing how the product behavior is now more consistent across different database types for error detection and reporting.

  2614802 (1088009)
- Previously, a nullable host variable in a stored procedure call might have generated an invalid call statement.

.NET JCL (General)

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- Previously, you received a Stack Overflow exception when trying to perform an SVC 99 operation.

  2591805 (1085797)
- Running multiple jobs at the same time under Enterprise Server for .NET which required the use of the same dataset resources resulted in internal JCL engine errors being reported, and the resources being permanently locked until the region was restarted.
- An intermittent RTS 114 error was occurring in MVS_JOB_STEP_RESOURCE_MGR during JCL execution under Enterprise Server for .NET.
- An intermittent IndexOutOfRangeException was occurring in Enterprise Server for .NET when using the casout utility to query a job's sysout datasets.
- Specifying an empty or blank "host" or "url" attribute value in a listener's configuration file, resulted in a UriFormatException produced at run-time when the listener process attempted to contact the dispatcher process.

.NET RTS

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- Using binary floating-point items on a machine with a non-English locale no longer produces errors.

  2657599 (1090407)
- The RuntimeServices Add() method for .NET COBOL no longer gives an exception for some instances of COBOL classes.

  2642836 (1088926)
- Using "DIVIDE ... GIVING quotient ROUNDED" where "quotient" evaluates to zero no longer causes an exception.

  2641108 (1088761)
- An error in JVM COBOL converting the result of a floating point expression to a fixed point expression has been fixed.

  2610381 (1087558)
- Computation of fractional exponents in .NET managed COBOL has been improved and is now much faster.

  2594740 (1086047)

Adis

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- Statements of type "DISPLAY SPACES AT LINE... POSITION... SIZE..." now only clear the screen at the specified coordinates and for the specified size.

  2644054 (1089103)
- The Compiler and ADIS now support RM/COBOL ACCEPT and DISPLAY behavior, including when the Compiler DIALECT(RM) directive and the RM2VCOB configuration in ADISCTRL are both used.

  2616898 (1088510)

ASM Compiler: HLL Macro Assembler

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- Assembler macro IEFZB4D0 now compiles cleanly.

  2192729 (1062581)
- MF370CHK now accepts spacey filenames if they are enclosed in double quotes. When assembling programs from the command line, you need to enclose spacey paths and filenames in double quotes - for example: RUN MF370CHK "C:\DIR\D IR\TEST.MLC" NOANIM

CAS (COBOL App Server) General

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- casgate no longer crashes when it receives a shutdown request from MFCS.

  2657261 (1090327)
- When an MFCS process terminated while it was processing an EZASOKET function for an application, the SEP remained in a waiting state indefinitely. Recovery processing now dispatches the SEP with a TERMAPI.

  2653313 (1090061)
- EZASOKET applications are now tied to a single comms process for the life of a task. Previously, in the event of termination of a comms process (if the process was not being used by an active EZASOKET application), recovery would cause any active EZASOKET applications to dispatch the new comms process on the next EZASOKET call (which would then fail) rather than the one it was already using.

  2653313 (1090060)
- When an enterprise server was processing a very large number of JCL jobs for the same class, a job could be locked for dispatch in SYSZJOBD forever.

  2617413 (1088420)
- The EZ sockets SELECT and SELECTEX APIs now duplicate mainframe behavior in ignoring mask bits that do not correspond to allocated descriptors. This means, for example, that SELECT can be passed as a mask set to -1 (all bits set) to refer to any sockets the application has open.

  2609555 (1087715)
- A problem with submitting jobs when "Local ES Security enabled" is checked for mfuser on the Users page in ESMAC has been resolved.

  2605873 (1087287)
- Jobs active during shutdown are moved back to the input queue when the server restarts.

  2588701 (1085584)
- Previously, when retrieving the spool information, the text of some error messages has been truncated.

  2582713 (1085017)
- Logging has been added for the resource managers to facilitate recovery from failures that leave the resource managers such as DB2 and MQ with in-doubt transactions. You only need to log if the resource manager switch modules are configured to respond to xa_recover() calls. Logging may affect the performance so you can disable it as follows - edit the server from the Enterprise Server Administration, click the General tab and type the following in the Configuration Information text box: [ES-Environment] ES_XA_LOG_SUPPRESS=Y

2582570 (1085539)
- If you define an XA resource definition in MFDS for MQSeries, you must deselect IBM MQ in the SIT definition in ESMAC, otherwise you will get a -5 error when the XA Switch is used.

CAS Security

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- A "redundant" or "high-availability" mode is now available in the Enterprise Server External Security Facility. It enables you to configure multiple equivalent Security Managers and let processing continue as long as at least one Security Manager is available. To enable this feature, add the following to the configuration text area for the security configuration (either in the default Enterprise Server Security, the MFDS Security, or on the Security tab for a specific enterprise server): [Operation] redundant=yes

2646298 (1089343)
- Previously, when using IMS with LDAP-based security, the system could sometimes stop processing requests for four minutes, and then issue a series of messages in the console log to indicate that threads had timed out waiting for a thread lock. The system would then generally recover and start processing again.

2640581 (1089108)
- The fix for this RPI addresses the following specific situations:

  1. Installation with an ESM that is not case sensitive for user IDs (for example - when sysad, SYSAD, SysAd and other case combinations are all recognized by the ESM as the same user).
  2. Installations where all user IDs are of a the same case - either uppercase or lowercase.
  3. Installations where the user IDs are of mixed case and you would like to suppress any additional ESM authorization attempts for keying errors.
  4. Only ESM-backed security is affected.

  You can now use the environment variable "ES_ESM_IDPW_CASE=xy" where "x" = user; ID case and "y" = Password case. The values for "x" and "y" are:

  - U = Always uppercase
  - L = Always lowercase
  - M = Mixed case and case sensitive

  When this environment variable is set, Enterprise Server will only make one attempt to identify a user presenting the user ID and password as is (M), folded to uppercase (U) or folded to lowercase(L). If this environment variable is not set, the legacy Enterprise Server behavior will be used. For the legacy behavior for CICS, the User ID and the password are used as supplied possibly filtered by the uppercase translation configuration of the sign-on transaction. For the legacy behavior for ESMAC and IMS you have the following sequence - first, the user ID and password are used as supplied. If the authentication fails, the User ID is folded to uppercase and used again. If this fails as well, both the user ID and the password are folded to uppercase and the used.

2640427 (1088819)
- For Enterprise Server External Security, the MLDAP ESM Module now supports retrying the connection to the LDAP server if it fails to connect. This provides some fault tolerance if the server is not immediately reachable. See the MLDAP ESM Module documentation for more information.

2619088 (1088485)
- When using an External Security Manager (ESM), an IMS printer no longer passes authorization incorrectly when it is unknown to the ESM.

2617526 (1088978)
- When the LDAP-based security has a long timeout (over four minutes) configured for LDAP operations, the ESF Manager now increases the timeout for thread locks accordingly so thread locks do not expire prematurely while the MLDAP ESM Module is waiting for a slow LDAP server.

- In Enterprise Server's External Security Facility, the MLDAP ESM Module normally attempts to set a user's failed-login count and last-login-time if the user class includes the associated LDAP attributes (microfocus-MFDS-User-LoginAttempts and -LastLoginTime). You can now disable this from the Security Manager configuration. See the documentation for the MLDAP ESM Module for more information.
- The cas-to-ad utility, which is used when initially configuring LDAP-based security for Enterprise Server, now picks up the correct path for the default location of the CICS resource definition file (dfhdrdat).

CAS XA Switch modules

Back to the list

- If a ROLLBACK is already in operation when an XA ROLLBACK is requested, Enterprise Server sees the rollback as being successful.

  2653121 (1089931)
- The XDB XA switch module was updated to add a missing variable definition which prevented compilation.

  2638370 (1088599)

CCI TCP/IP

Back to the list

- CCITCP now supports more than 4000 clients per server process on UNIX systems. CCITCP's memory consumption with large numbers of clients should also be reduced, compared with previous releases.

  2589460 (1089134)
- CCI has been extended to allow the user to tune the content and location of first failure error messages produced by CCI. This is controlled by the errlog_path option in the cci.ini configuration file.

  2083845 (1053206)

Compiler

Back to the list

- Programs with data names containing certain DBCS characters now compile as expected. Previously, they would incorrectly report error message "COBCH0005 User-name not unique.".

  2663436 (1090882)
- VALUE clauses on THREAD-LOCAL data items are now always correctly initialized on a per thread basis.

  2659874 (1090647)
- Debugging with Expression view expanded to show many qualification levels of a data record no longer causes the IDE to crash.

  2659532 (1090682)
- A MOVE of a numeric literal to a JUSTIFIED RIGHT data item now executes as expected.

  2658757 (1090641)
- The MOVELENCHECK directive now also includes checking when the source item is an alphanumeric literal.

  2656595 (1090311)
- When compiling with DIALECT"ACU", a comparison between a numeric item and the figurative constant NULL now works as expected.

  2653033 (1089923)
- Comp-1 data items are now processed correctly under DIALECT"RM". Previously, they were treated as binary floating point items.

2652327 (1089892)

- Preprocessors now work as expected with the DIALECT"ACU" compiler option.

2649324 (1089577)

- The DIALECT(RM) directive now sets PERFORM-TYPE(RM).

2647147 (1089366)

- Large EXEC statements containing DBCS characters now compile without error.

2645584 (1089204)

- List file output with the DATAMAP directive is now shown correctly for SJIS data names.

2643308 (1088962)

- The DBCS hyphen character x"817C" is now treated as occupying the correct number of column positions, and so prevents spurious compile errors for comments in Area C.

2642431 (1088863)

- Programs using ACUCOBOL-GT index names now execute as expected.

2641124 (1088755)

- A VALUE clause on a national data item that specifies a figurative constant now works as expected.

2640826 (1088820)

- An "out of memory" error when compiling ACUCOBOL-GT programs with both COPY REPLACING and REPLACE statements has been fixed.

2640304 (1088671)

- $DISPLAY of SJIS characters now works as expected.

2640050 (1088644)

- Tab characters on the same line as DBCS characters no longer cause margin issues.

2638792 (1088607)

- The maximum number of extensions supported by the COPYEXT directive has been increased to 25.

2618274 (1088353)

- Literals assigned to DBCS data items are now checked for valid content.

2618240 (1088339)

- When running under RM/COBOL or ACUCOBOL-GT emulation, appropriate declaratives are now executed for an unsuccessful DELETE FILE operation.

2616717 (1088313)

- The emulation of RM/COBOL has been improved regarding the default encoding of numerics types.

2607368 (1088045)

- The error message for when special register names are used as data-names has been improved.

2599694 (1086646)

- A qualified reference to a paragraph in another section followed by an unqualified reference to the same paragraph now compiles without error.

2598461 (1086498)

- Display statements are now displayed correctly when using the window1 preprocessor.

2591903 (1085826)

- A syntax error is now produced if you attempt to use a data item with more than 18 numeric positions in extended ACCEPT/DISPLAY syntax.

2590649 (1085688)

- The COPY statement no longer requires Katakana characters in a copybook's name to be enclosed in quotation marks in order for the copybook to be found.

2582689 (1085009)

- With regards to file handling, the DIALECT(RM) compiler directive now better emulates the default behavior of the latest RM/COBOL product.

  2582096 (1084955)
- An error with EXTERNAL files where the fd name is the same as the name of an OS function (e.g. sin or strcpy), which caused an rts error 114, has been fixed.

  2492339 (1077479)
- An error in ADD statements with multiple targets, where one of the targets has a subscripted subscript, has been fixed.

  2189318 (1062255)
- Error messages 'RTS226 External file definition inconsistent' and 'RTS227 External data definition inconsistent (Fatal)' have been enhanced to give additional information.

  2188868 (1062214)
- Parsing and consistency checking of the FOREGROUND-COLOR attribute in DISPLAY statements has been improved.
- The Compiler no longer crashes when processing the USE Compiler directive and the specified directive file does not exist.
- Under a Shift-JIS locale, you can now successfully compile a program containing tilde characters.
- EXEC statements are now subject to the action of REPLACE statements (INCLUDE names excepted).
- An INSPECT statement with both 'TALLYING .. FOR TRAILING ..' and 'REPLACING TRAILING ..' syntax now compiles successfully and executes as expected.
- The CHANGE-MESSAGE and HIDE-MESSAGE directives have been enhanced to allow non-severe SQL and CICS errors to be configured (their severity changed or completely suppressed). This can be achieved using the error message's 2-character sub-component prefix; for example, CHANGE-MESSAGE(ES1000 N). If no prefix is specified, CH is assumed.
- You now receive a warning when you use a TYPEDEF-NAME as a parameter for the PROCEDURE DIVISION header of an ENTRY statement, except for external programs or program prototypes where this syntax is legal.
- The Compiler no longer crashes with an RTS114 error after finding multiple Report Writer syntax errors.
- A error processing a bitwise logical expression that has a subscripted operand where the subscript is an arithmetic expression has been fixed.

CICS: Problems not classed above

Back to the list

- The BMS Compiler message "BMSCH1064S Missing comma after operand with continuation, continuation cards ignored" has been changed from a warning to a serious error and the return code is set to indicate the error condition.

  2639889 (1088636)

Cob/Cbllink/Cblnames (32-bit PC)

Back to the list

- CBLLINK no longer gives an error when an object file is specified in a fully qualified path containing a dot.

  2605052 (1087384)

Documentation

Back to the list

- The documentation was not clear about the range of acceptable values of EX_XA_????_NB_RETRIES or the consequent system behaviours. This has been corrected.

2593300 (1085893)

- The documentation has been amended to alert users that under certain conditions, a dynamic binding error is possible

2553077 (1082557)

- You no longer need a 64-bit enterprise server in order to communicate with Microsoft BizTalk Host Integration Server on a 64-bit machine.

2614060 (1087978)

- The MFA installation process references a missing card image PDS file that can cause the MFAAS task to fail the first time it runs. You should define this file, by creating it under TSO or by submitting JCL. For example: //DEFVCTL JOB (MFA),MSGCLASS=A,CLASS=A,MSGLEVEL=1 //* //* Define Data Connect VSAM mapping control //* // EXEC PGM=IEFBR14 // MFAVCTL DD DSN=<hlq>.MFAVCTL, // UNIT=3390, // VOL=SER=volser, // DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160), // SPACE=(CYL, (1,1,25),RLSE),DISP=(,CATLG,DELETE) You must assign an appropriate high-level qualifier and select the unit and volume names for where this file will reside. In addition, each site may assign storage class options which comply with their data centre's standards.

2260128 (1065835)

- The casrdtex documentation has been updated to include several more supported parameters.
- The documentation has been updated to explicitly state that the "3270 Print" field must be defined as "Y" if CICS printing is to be enabled.

2613401 (1087890)

- The documentation has been updated so that the help page more accurately reflects the ESMAC screen.

2611733 (1087753)

- The documentation now includes information about the -stcpssl cassub option.

2605136 (1087060)

- The product documentation now includes information about the ES_JESYSMSG_OUTPUT environment variable.

2604533 (1087004)

- The documentation has been updated to clarify the effect of escape characters on path names.

2594224 (1086013)

- The CPMT transaction no longer supports the CEDF or NOCEDF functions.

2527592 (1089531)

- The documentation has been updated to clarify the background information relating to JCL User Exits.
- The documentation has been updated to clarify background information related to JCL User Exits.
- The documentation has been updated to remove references to ERRORLEVEL in UNIX environments.

2610423 (1087575)

- The documentation has been updated to provide more information about the MFJAMS LISTCAT command.
- When invoking MFSORT from the command line, the maximum length of the command is 1024 characters. Characters after this limit are ignored, and if this truncation causes an invalid/incomplete command, an error is produced.

File Handling - External File Handler

Back to the list

- For SORTIN, all data sets in a concatenation must use the same RECFM - either all fixed-length or all variable-length. Also, if using fixed-length records, LRECL must be set the same for all data sets.

2654517 (1090095)

- A COMMITFLUSH no longer causes file corruption. Previously, corruption was possible with COMMITFLUSH on when a process, having done only a rewrite that changes non-key data, is committed after another process has altered the files size.

  2652378 (1090281)
- The RM RECOVER1 utility is now distributed with Enterprise Developer in case RM indexed files need to be recovered or rebuilt.

  2650917 (1090175)
- Support has been added for the ASSIGN TO PRINT syntax when accessing RM/COBOL data files. Specifically, BEFORE ADVANCING <count>, AFTER ADVANCING <count>, BEFORE ADVANCING PAGE, and AFTER ADVANCING PAGE now work correctly and produce the same print file contents as they do in RM/COBOL.

  2649809 (1089792)
- The RM/COBOL configuration option RMFM_RUN_INDEX_FILES_DEFAULT_FILE_VERSION_NUMBER 2 now correctly creates a version 2 RM/COBOL indexed file.

  2649414 (1089679)
- A SORT action no longer fails due to an illegal filename when the SORTTEMP file is specified to be an RM file using EXTFH.CFG.

  2648865 (1090292)
- File names containing embedded spaces now work correctly in XML Extensions.

  2648306 (1089486)
- The correct file status "23" is now stored in the file status data item, which will cause the proper INVALID KEY condition action for REWRITE RANDOM or DELETE RANDOM I/O operations on an RM/COBOL data file.

  2648182 (1089461)
- A WRITE or REWRITE operation on a fixed record length RM/COBOL or ACUCOBOL-GT file no longer generates an erroneous 44 error after a READ of a short record.

  2647143 (1089369)
- DELETE and REWRITE operations on an RM/COBOL indexed file with DYNAMIC access and where the prime key allows duplicates now work correctly, meaning that the behavior matches RM/COBOL, where the operation behaves like sequential access and deletes or rewrites the current record.

  2646274 (1089289)
- When opening an RM/COBOL data file for input, a READ WITH LOCK after a READ WITH NO LOCK no longer returns an erroneous 99 (record locked) error. This matches RM/COBOL behavior for a file opened in the input mode.

  2644830 (1089726)
- When accessing RM/COBOL data files, a file status of 04 is correctly returned where appropriate.

  2616717 (1088310)
- When accessing RM/COBOL data files or calling C$RERR, file statuses '44,03', '44,04', and '44,07' are correctly returned where appropriate.

  2616717 (1088465)
- When accessing RM/COBOL data files or calling C$RERR, file status '47,01' is correctly returned where appropriate.

  2616717 (1088467)
- When accessing RM/COBOL data files or calling C$RERR, file status '48,01' is correctly returned where appropriate.

  2616717 (1088468)

- When accessing RM/COBOL data files or calling C$RERR, file statuses '93,02' and '90,05' are correctly returned where appropriate.

  2616717 (1088469)
- A file status of 90,05 is now correctly displayed as 90.

  2616717 (1088449)
- C$RERR now reports a meaningful 30,22,nnnnn error, where nnnnn is the Micro Focus extended status, when the File Handler diagnoses an operation error on an RM/COBOL data file.

  2616717 (1088470)
- File Handler now converts the charset of all instream data in a concatenated dataset to that of the calling program.

  2606382 (1087212)
- The file locking for VB files with DISP=SHR has been removed. It is now the user's responsibility to ensure that other users do not update the file at the same time.

  2605857 (1087302)
- EXTFH configuration options specified under the FOLDER tag now work correctly with UNIX files when they are specified with an absolute path in the SELECT statement of a COBOL program.

  2594733 (1086089)
- Concatenating multiple SYSIN DD statements now works correctly.

  2590465 (1085905)
- File corruption no longer occurs when you make two rewrites of a record in the same transaction, where the first rewrite changes an alternate key and the second rewrite changes it back again.

  2576793 (1084780)
- CTF tracing no longer defaults to showing CTF handles as errors. CTF tracing for handles now only appears for DEBUG and ERROR levels.

  2566161 (1083551)
- If the DDname is missing from JCL, the value of COBDATA is not used to search for a file.

  2559292 (1084935)
- The rebuild help message file has been updated to correct a typo.
- Fileshare now supports the ACU and RM file formats.

File Handling - Fileshare

Back to the list

- SORT no longer abends if the SORTIN file is a Fileshare file.

  2653753 (1090002)
- A commit-prepare now returns non-zero error code if the Fileshare server is not running.

  2637773 (1088492)
- If the Fileshare server crashes before a commit or a rollback in the two-phase commit, the transactions before a commit-prepare are now committed while recovering the file.

  2637773 (1088493)
- Byte-stream routines called from Fileshare clients now work correctly with a 64-bit Fileshare server.

  2607314 (1088601)

File Handling - Sort / JCL Sort

Back to the list

- When a previous SORT operation had a larger SORTOUT, the next SORT now works correctly.

2661456 (1091272)

- A SORT with OUTFIL SECTIONS no longer abends with an S0C4 error code.

2654272 (1090066)

- Errors no longer occur when sorting large records with SORTCOMPRESS set to 5.

2654143 (1090038)

- If the SORTSPACE or SORTTEMPSPACE environment variables are set outside of their documented limits, a message is emitted in SYSOUT.

2651650 (1089880)

- When SKIP=P is specified for a SECTION in an OUTFIL control statement, HEADER2 records are correctly printed when the page breaks for the SECTION break.

2651125 (1089958)

- Masking with III now correctly displays a space instead of a zero when the input is PD 000.

2650644 (1090020)

- MFJSORT no longer abends if a physical file is missing when SORTIN is directed to DUMMY.

2647785 (1089487)

- MFJSORT now support the use of FORMAT where some field types were already specified; for example: SORT FIELDS=(1,3,A,5,3,CH,A),FORMAT=CH

2646265 (1089410)

- The maximum number of SUM FIELDs allowed in a sort has increased to 600.

2646246 (1089405)

- The length of the TOTAL field is now calculated correctly, using the value specified in the LENGTH parameter.

2643037 (1088960)

- Under ICETOOL emulation, the maximum size of an ON field for ZD data types has been increased from 15 to 31 bytes to emulate mainframe behavior.

2641631 (1088811)

- Support has been added for the SPLICE operator when using the DFSORT ICETOOL emulation.

2641128 (1088775)

- DFSORT emulation now supports the DATEDIFF functionality.

2640737 (1088843)

- Under ICETOOL emulation, the maximum size of an ON field for data type CH has been increased from 80 to 4000 bytes to emulate mainframe behavior.

2617590 (1088345)

- SORT now correctly validates the file attributes of SORTOUT and any OUTFILs that are used with FTOV.

2615463 (1088131)

- MFJSORT now supports the format code FS when it is used as an input format in INREC and OUTREC statements in JCL sort.

2612188 (1088012)

- SORT now terminates with return code 16 and throws a 9/013 error when the catalogued input file is not physically present.

2607690 (1087529)

- SORT now terminates with return code 16 and displays error message "SORT103E Invalid operator .JOINKEYS." when the JCL contains the JOINKEYS parameter.

2607369 (1087311)

- A SORT RETURN statement now returns a 9/230 error for the return past EOF.

  2606867 (1087358)
- Support has been added for processing negative FI summary fields.

  2604402 (1086996)
- When running a mainframe SORT under certain circumstances, the LRECL for mainframe print files no longer gets set incorrectly.

  2600541 (1086632)
- SORT now correctly abends when MFJSERET is set to ABEND.

  2597115 (1086370)
- SORT now terminates with an error RC=16 when the SORTOUT DD is missing from the JCL.

  2594119 (1086423)
- SORT no longer adds extra bytes to the output file when the SORT card includes either CHANGE or NOMATCH options.

  2589359 (1085677)
- The ALLDUPS option of the ICETOOL emulation now correctly separates records with duplicates and without duplicates.

  2582219 (1085463)
- Performing a check of the SORT FIELDS length against SORTIN record length is no longer needed if the SORTIN physical file is missing.
- The SECTIONS parameter now works correctly when using multiple OUTFILs in a SORT.
- SORTOUT is no longer confined to OUTFIL processing.

JVM - Compiler

Back to the list

- Previously, a program using a MAX OR MIN function with an ALL parameter was generating bad code when compiled for JVM.

  2647112 (1089359)
- Previously, you could receive some warnings for calls to the RM library routine C$GetEnv.

  2601487 (1086710)
- When compiling JVM COBOL, if the PERFORMTYPE directive is not set to the default value of mf, very large programs sometimes do not compile. In such cases, 'COBCH1633 - Procedure division too large or complex - try using performtype(mf)' is displayed. Compiling with performtype(mf) normally fixes the problem.

  2581224 (1084860)
- In Windows environments, if a COPY statement specified a file name that was not in quotation marks, or did not include the full extension, then setting a breakpoint in that copy file was not always successful.

  2577765 (1084637)
- Copy statements that reference a file whose path contains spaces no longer cause errors.

  2577765 (1086750)
- Previously, the JVM Compiler did not recognize COBOL static inner classes (that is - nested classes without a SHARING PARENT, or nested classes produced using ILSMARTNEST).

JVM - RTS

Back to the list

- When using JVM COBOL with Apache Tomcat, you no longer see warning messages from the org.apache.catalina.loader.WebappClassLoader checkThreadLocalMapForLeaks class relating to classes in the package com.microfocus.cobol and below.

  2612595 (1088144)
- When creating a debug configuration for a JVM COBOL application, superfluous classes are no longer listed on searching for a Main class.
- Previously, when a thread called a subprogram with thread-local storage it might have intermittently got reset when creating many threads quickly.

Macro Preprocessor

Back to the list

- SYSVERSION is supported by the macro preprocessor.

  2549363 (1082124)

MF Common Client

Back to the list

- A problem with the Micro Focus Common Client not supporting 64-bit COBOL programs on UNIX and Linux has been fixed. This enables ECI functionality for 64-bit COBOL programs, and may correct issues with certain other features such as Web Services clients.

  2642116 (1088854)
- When there are multiple directories configured in mf-client.dat, the service deployment tools (such as imtkmake) and the IDE features now correctly scan all directories for deployment destinations and not only the first one.

MF Communications Server

Back to the list

- In EZASOKET/EZACICAL applications, the "reserved" portion of the socket-address information returned by API calls (such as GETSOCKADDR and GETPEERADDR) is now set to low-values, for improved mainframe compatibility.

  2659699 (1090549)
- You no longer receive a run-time system error when an invalid IMS Connect message is received with a missing end-of-message indicator.

  2649746 (1089727)
- A problem causing IMS Connect conversations to an enterprise server to hang has been resolved.

  2645771 (1089247)
- For SSL-enabled listeners in Enterprise Server, MFCS now offers the option of setting SSL keyfile passphrases using a user exit module. For instructions and a sample module, contact Micro Focus SupportLine.

  2641670 (1088950)
- Intermittent failures in the CICS Web Interface servers that send chunked responses have been fixed.
- The SO_LINGER socket option in CICS sockets (EZASOKET / EZACICAL) now works correctly.

MF Directory Server

Back to the list

- In the Enterprise Server Administration HTML GUI, clicking "Update All" on the Security Manager List page while an enterprise server instance using external security was started would cause the MFDS process to terminate.

2654069 (1090069)

- The MFDS XML import command line option correctly sets the value of the listener's SSL client authentication option on import.

2653699 (1090115)

- The MFDS command line options to export or import server configuration data when using an external Security Manager now work correctly.

2652779 (1089981)

- If the custom configuration text for an Enterprise Server instance was larger than 4K and the "Create XML repository copy" repository option was selected or, if the server configuration was exported in XML format, the MFDS process could terminate.

2650330 (1089683)

- The MFDS -x and -g command line options for creating and importing Enterprise Server instance configuration in XML format can now be run against an MFDS process running on a specific TCP address and port by using the CCITCP2 and CCITCP2_PORT environment variables.

2646427 (1089303)

- The correct details for Enterprise Server "MSS Inter-System Communication" conversation type listeners can now be exported and imported using the MFDS XML export/import feature.

2644237 (1089091)

- The "Directories" link in the Enterprise Server Administration GUI did not function correctly based on the configured Security Manager permissions for a logged on user.

2583624 (1085073)

- When you use casstart from the command line to start an enterprise server instance that appears as "Not Responding" in the Enterprise Server Administration, the status log for that server is now cleared when the server reaches "Started" state.

2570318 (1086170)

MFA: GUI components

Back to the list

- MFAVCTL is now supplied with the MFA installation.

2591556 (1085784)

- Issuing MFDAS DIR PAN dsn FILTER * ALL no longer results in an compressed output.
- Changing your password or phrase using the ME logon dialog now works.
- The MFA server will no longer abend if a user tries to change a password to a passphrase and vice versa.
- MFDAS exports of files with spaces in their names to VB format QSAM data sets no longer produces an empty file.
- MFDAS STATUS FILTER * will now work correctly with the latest MFA servers.
- The data set context menu now has a Properties item.
- MFA CATDCB displays now correctly list DA data sets.
- MFA clients will now be able to determine if Changeman is installed on the mainframe and will modify dialogs appropiately.

MFA: Mainframe

Back to the list

- The MFA GUI components have been updated to support 20-byte pass phrases which are now validated by the server. The following new server configuration option that enables passphrase support is now available: MFA_GUI_ACCEPT_PASSPHRASES=YES

2524253 (1080571)

- You can now select a particular SYSOUT dataset by specifying the dataset name. The output from DIR JESDD displays has been enhanced and jobname filters may be used with the STATUS option.
- Large binary uploads sometimes resulted in some data corruption.

MFBSI

Back to the list

- If a huge number of jobs are submitted by the scheduler in a short period of time, some MFBSIJCL instances may end with an error RC 244. To work around this issue, use the new MFBSI.CFG parameter "EMX-Timeout=nn" to increase the default timeout interval of 5 minutes to a longer interval (10 or 15 minutes). This allows all job conclusion tasks to complete.

    2608309 (1089075)

MTO - CICS BMS Screen painter

Back to the list

- Compiling a BMS map now generates a COBOL copybook with PIC G data items if DBCS is defined using PS=8 or PS=X'F8' for the field macro.

    2614393 (1087970)
- Compiling a BMS map now generates a COBOL copybook with PIC G data items if DBCS is defined using PS=8 or PS=X'F8' for the field macro.

    2605849 (1087131)
- You no longer receive an error message when compiling COBOL language BMS files if a PICOUT string in them contains the character "0" (zero).

    2591902 (1085804)

MTO - CICS ECM/Preprocessor/Translator

Back to the list

- The figurative constant ZERO together with its variants is now recognized as a parameter in a CICS command.

    2663191 (1090846)

MTO - CICS Emulation

Back to the list

- Using CALL and LINK statements to the same CICS program multiple times within the same task no longer causes an RTS 200 error. Note that mixing CALL and LINK statements to the same program can cause an incorrect RESCOUNT.

    2642963 (1089521)
- EIBRCODE is now returned correctly following an EXEC CICS START command.

    2616152 (1088292)
- The documentation now clarifies the usage of DDnames in the SSTM context.

    2593338 (1085948)
- EXEC CICS ASSIGN USERNAME will now return spaces, as the username information is not held anywhere in either the resource definition files or the ESM.

    2583351 (1085968)

MTO - CICS ESMAC

Back to the list

- In the Spool display, the number of lines displayed is now kept in sync with the current selection even if the page is refreshed using the browser refresh button.

  2608719 (1087732)
- The "Home" link in the ESMAC HTML page now correctly links back to the Enterprise Server Administration HTML GUI page if SSL is being used for the browser connection to both GUIs.

  2526354 (1085186)
- The Refresh button at the bottom of the ESMAC page now works correctly.

  (595265)

MTO - CICS Utilities

Back to the list

- A BMS field name is no longer replaced with a default unique name when BMS GT options are enabled and the BMS field name is shorter than 3 characters.

  2615161 (1088123)
- The size of the variable used to parse the commands you enter at the command line has been increased to more than 255 characters.

  2572053 (1084087)

MTO - IMS DB

Back to the list

- Previously, the casout command was unable to display output from /DIS DB commands when the output contained one or more blank lines.

  (586190)
- An ISRT call that results in a DEADLOCK and is subsequently chosen as the DEADLOCK loser failed to return an FD status code.

  (598691)

MTO - IMS ESMAC

Back to the list

- Using the ESMAC /DIS TRAN ALL and /DIS USER ALL buttons no longer fails unexpectedly with an RC=24 message.

  2644785 (1089181)

MTO - IMS TM

Back to the list

- An MPR running a Wait-for-Input transaction no longer sporadically gets stuck and incorrectly marked as busy.

  2651114 (1089764)

MTO - IMS Utils

Back to the list

- The IMS DB editor no longer fails with a run-time system error 173 on the "mFHTSRtr" file.

  (593399)
- Previously, a /STOP DB command might have been causing an infinite loop in the JES initiator that invoked it.

(595100)

MTO - JCL ESMAC

Back to the list

• A problem where Japanese letter appeared corrupted in SPOOL view has been resolved.

  2664435 (1090962)

• Dynamic PDS member names starting with "$$" were not displayed in the catalog view.

  2652384 (1089877)

• You no longer receive a Script Errors window, with Enterprise Server in Internet Explorer (with "Display a notification about every script error" turned on in Advanced Options) or from within Enterprise Develiper for Visual Studio 2010, when you navigate to ESMAC and select JES/Catalog.

  2598615 (1086461)

• The errors in the EBCDIC characters displayed in the ESMAC Spool and Catalog page have now been corrected. If a character is not displayable, it will be displayed as a '.' in ESMAC. Viewing the file in a DATA VIEWER should display the characters as expected. However, it should be remembered that ESMAC should not be used as a DATA VIEWER tool.

  2551170 (1085713)

MTO - JCL MVS

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• A PC file is now created when allocating empty datasets with DISP=(NEW,PASS) set.

  2647864 (1089720)

• The JCL lexical files, produced when parsing a JCL Job stream, are not compatible with previous versions of this product. This only affects jobs that may be restarted. Such jobs may not be restarted if originally run in an earlier version of the product. Trying to restart them produces JCL errors.

  2644393 (1090222)

MTO - JCL System Catalog

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• In certain circumstances a job could complete normally without the return code displaying in the ESMAC output spool view. This has been fixed.

  2607769 (1087362)

• The referenced data in the catalog entry for a pds model is now updated whenever the catalog entry for any of its members is updated.

  2581611 (1084905)

MTO - JCL TSO

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• The documentation has been updated to clarify the IDCAMS commands available within TSO batch jobs.

  2573281 (1084163)

MTO - JCL Utils

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- A header is now created for an empty VB file when the environment variable MFALLOC_PCFILE is set to Y.

  2648281 (1089537)

MTO - JCL Utils - IDCAMS

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- The IDCAMS REPRO of records into an RRDS file that already contained data was generating a file write error. This has been corrcted. If the RRDS file contains records and REPLACE has been specified in the REPRO command then the records will be overwriten. If REPLACE has not been specified then a DUPLICATE RECORD (JCLAM0236E) error will be generated.

  2601984 (1086780)
- If the pc file associated with an empty unopened VSAM dataset was populated outside of JCL, the flag on the catalog remained set to empty. The record count is now checked, and if this is not 0, the empty flag is switched off.

  2561933 (1083277)

MVS REXX Emulation

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- The REXX engine previously assumed that all hexadecimal strings represented EBCDIC characters. This resulted in the X2C built-in function producing an incorrect result when a hexadecimal string representing ANSI data was used. The MFREXX_CHARSET environment variable can now be used to indicate whether the REXX engine should use EBCDIC or ANSI when working with hexadecimal strings or performing string comparisons.

  2647920 (1089596)
- Trace options set in a parent procedure are now propagated to a CALLed internal procedure.

  2612317 (1087818)
- Execs residing in temporary datasets allocated to SYSEXEC or SYSPROC no longer sometimes fail to load.

  2579785 (1086478)
- The LASTPOS function no longer returns an incorrect result if the 'start' parameter value exceeds the length of the 'haystack' parameter.

NCG

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- You no longer receive an RTS 114 error when stepping EXEC SQL statements in debug mode.

  2611568 (1088003)
- A bug in "display ... upon environment-name" with the [NOT] ON EXCEPTION clause has been fixed.
- A bug that affected querying linkage items in a program that has parameters in working-storage has been fixed.

Open PL/I CICS Preprocessor

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- Accented characters with a code of 'ef'x are now supported.

  2653232 (1091079)
- This RPI resulted in new feature documentation for the new PLICNV utility, rather than a readme entry.

  2581884 (1085022)

- When a nested %INCLUDE is preprocessed by the macro preprocessor, the corresponding %ENDFILE is now injected into the preprocessor output in the correct column (column 1).

  2546061 (1082294)

Open PL/I Compiler

- A problem no longer occurs when assigning Picture to Fixed Decimal with zero scale and differing precisions.

  2665723 (1091114)
- When a CHAR data item uses the POSITION attribute as part of an illegal DEFINE, the Open PL/I Compiler now uses BYTE units to calculate the POS offset rather than the base variable's size units.

  2661472 (1090693)
- Declaring a named constant as type CHAR VARYING now correctly raises an error. The VALUE attribute is ignored in this case.

  2659096 (1090511)
- The Open PL/I Compiler no longer produces erroneous diagnostics due to the loss of fractional digits in fixed decimal arithmetic.

  2658646 (1090473)
- Using the SUM, ALL, ANY, or PROD built-in in an initial clause no longer causes a compiler abort.

  2658113 (1090424)
- The COPY built-in no loners encounters a performance issue when the specified string and number of times to copy is greater than or equal to 32765.

  2657699 (1090387)
- A compiler issue no longer occurs when processing AREA of storage class BASED.

  2655714 (1090180)
- Multi-edit PUT STRINGs now work correctly on all platforms.

  2654555 (1090113)
- Using FETCH on a function declared without OPTIONS(FETCHABLE) no longer raises compiler error message MFPLI02000A.

  2654320 (1090071)
- The Open PL/I Compiler no longer raises an error when converting a type PIC to BIT(1).

  2653666 (1089989)
- The Open PL/I Compiler no longer abends with an error when named constants of type PICTURED are used.

  2653250 (1089963)
- The Open PL/I Macro Preprocessor now correctly generates lines greater then 256 characters.

  2653116 (1089932)
- A problem with producing extra trailing zeroes when moving PIC items no longer occurs in the Open PL/I run time.

  2651507 (1089939)
- Passing a function name with an empty parameter list as an argument to a subroutine or function call is now treated like a function invocation (unless type ENTRY is specificed in the parameter descriptor).

  2651414 (1089761)
- A problem no longer occurs when converting a fixed point binary constant to type BIT.

  2650756 (1089721)

- A run time SIGSEV error whe using a conditional AND and OR with structure member refeences no longer occurs.

  2649990 (1089644)
- Using TRIM(TRIM()) no longer produces incorrect results.

  2649021 (1089553)
- Combining the VERIFY() and TRIM() built-in functions no longer gives an incorrect result.

  2647769 (1089432)
- AREA sizes greater than 32K are now allowed. The implementation limit of the compiler and runtime is 2 Gigabytes. Note that very large AREA sizes may be impacted by system resources.

  2646608 (1089309)
- Using a function invocation without parentheses returning pointer no longer causes a compiler error.

  2646126 (1089263)
- mfpli no longer generates illegal instructions for some complex PUT statements.

  2644311 (1089089)
- A PLIDUMP and Codewatch issue displaying char varying data items no longer occurs when using the -bigendian compiler option.

  2643377 (1089259)
- Severe error MFPLI00092S no longer occurs when using the STG or SIZE built-in on a based variable without a locator.

  2642953 (1088914)
- Decimal rounding now generates the correct code.

  2642571 (1089083)
- Comparison operators for named constants now function as expected.

  2641149 (1088758)
- A problem passing a CHAR VAR parameter no longer occurs when using the -zp1 compiler option.

  2641060 (1088916)
- A problem with relational comparisons between OFFSET variables and the NULL built-in no longer occurs when the compiler option -setnull 0 is not used.

  2618457 (1088544)
- A problem with the POINTER built-in returning -1 no longer occurs when the first argument is a NULL() offset reference and the compiler option -setnull 0 is used.

  2618457 (1088527)
- The built-in functions OFFSETADD, OFFSETSUBTRACT, OFFSETDIFF, and OFFSETVALUE are now supported.

  2616735 (1088217)
- When initializing fixed decimal static arrays, an erroneous 343E diagnostic message with regard to precision and scale was being issued.

  2609295 (1087452)
- Named constants of type BIT with static initializers no longer has a regression issue.

  2607316 (1087296)
- An issue which resulted in a SIGSEGV during the code generator phase of the Compiler has been resolved.

  2607092 (1087283)
- The Open PL/I Compilker no longer encounters a problem using a CHAR(*) VAR parameter as the argument to the MAXLENGTH built-in.

  2606704 (1087241)

- Any varaible declaration with conflicting storage attributes now produces and E-level diagnostic. The Open PL/I compiler accepts the first storage attribute and ignores any additional storage attributes.

  2605852 (1087130)

- Parameter declarations with a CHAR length given by the CSTG, STG or LENGTH builtins is now supported.

  2605672 (1087148)

- A problem with a function call in the RETURN statement has been fixed.

  2605508 (1087098)

- The Open PL/I Compiler now evaluates restricted expressions on RETURNS descriptors in entry declarations.

  2605506 (1087097)

- An issue with using SUBSTR of a character pictured variable as a pseudo-variable has been resolved.

  2603607 (1086979)

- For the Open PL/I Compiler, the implementation limit of 64 for the number of data and format list pairs in an edit-directed specification has been increased to 256.

  2600690 (1086769)

- An erroneous diagnostic for fixed decimal variables accepting the specified number of digits has been fixed.

  2600689 (1086830)

- The Open PL/I Compiler now correctly handles bit variables with DEFINED storage and the POSITION attribute.

  2600658 (1086738)

- An issue with using the NULL and SYSNULL built-ins in a named constant VALUE expression no longer occurs.

  2599747 (1086545)

- Using the DIM builtin as part of a restricted expression evaluation in declarations has been fixed.

  2599097 (1086516)

- Using INITIAL clauses that contain concatenation of string constants were generating compiler errors.

  2598242 (1086434)

- The string concatenation of the HIGH/LOW built-ins with a repeat factor no longer returns incorrect results.

  2597746 (1086379)

- A problem when using the STRING function as a pseudo-variable and the Compiler switch -range has been fixed.

  2597682 (1086550)

- When the Regional Language setting for the decmial point was a ccmma (for example 3,141592), a possible floating point conversion error from ASCII to float binary occurred.

  2593986 (1085970)

- The TINY and HUGE Open PL/I built-ins are now supported.

  2592830 (1085870)

- An incorrect padding of trailing blanks occurred for a string returned by the expression HEX(SUBSTR(...)).

  2590174 (1085658)

- A possible memory leak in -opt mode no longer occurs when using character strings in a relational comparison.

  2587143 (1085402)

- Beginning with Enterprise Developer 2.2, short-circuiting of IF statements occur independent of the optimizer at all -opt levels including -noopt, which means you should not encounter optimization warning diagnostics.

  2553574 (1086481)
- Previously PL/I Programs which contained FIXED DECIMAL variables that required a precision > 18 would not compile and execute successfully in Enterprise Developer. Open PL/I Programs can now support a FIXED DECIMAL precision of 31 or less.

  2549420 (1082138)
- A FIXED BINARY named constant with a value clause that uses the BX format no longer produces a compiler error.

  2521502 (1079751)
- The VALIDDATE built-in is now supported.

  2467971 (1075530)
- An Open PL/I Program that previously could not be preprocessed by the macro and SQL preprocessors no longer compiler incorrectly or with errors.

  2467964 (1075506)
- The VALUE clause in named constants has been enhanced to support the POINTERVALUE built-in.
- An erroneous result no longer occurs when assigning a PICTURE, FIXED DECIMAL, where the fixed decimal item scale is equal to 0, the FIXED DECIMAL item precision is equal to the PICTURE item scale and the PIC item has no significant digits.
- The -nodebuginfo option is now available when using mfplx to invoke the macro preprocessor.
- A problem with passing an unaligned variable to the HEX built-in has been fixed.
- The Open PL/I Compiler now supports the PARAMETER attribute.
- The Open PL/I compiler now supports hexadecimal (XN) fixed binary constants.
- The Open PL/I Compiler now supports the NOINIT attribute.
- The Open PL/I Compiler now diagnoses CLOSE FILE(*) as not yet supported.
- The CLOSE FILE (*) statement is now supported.
- The -map compiler option now shows pad bytes inserted for alignment between structure members. This applies only to pad bytes inserted between structure members which have a constant offset from the beginning of the structure.

Open PL/I Compiler Back-End

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- You no longer receive an error 211, "Assignment of arrays or structures is only valid if both sides of the assignment have identical size, shape, and component data types".

  2355413 (1069925)

Open PL/I Debugger

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- A problem with PLIDUMP abending that was caused by variable-sized structure arguments on the stack frame no longer occurs.

  2650211 (1089995)
- The warning message "stb is newer than executable file" in CodeWatch no longer triggers inaccurately.

  2611268 (1087655)
- Codewatch correctly starts a debugging session on the application program's PROC statement rather than the CICS "start-up" code.

  2609009 (1087685)

- A problem evalualting CONTROLLED variables in the Open PL/I Debugger has been fixed.

  2578290 (1085303)
- CodeWatch now correctly debugs into procedures included using a %INCLUDE statement which is nested inside of another procedure.

  2572827 (1084459)

Open PL/I Macro Preprocessor

- Variable values are no longer incorrectly passed to the macro preprocessor when the macro preprocessor uses variable as a parameter and the closing parenthesis immediately followes the preprocessor variable name.

  2655735 (1090181)
- The macro preprocessor no longer terminates abnormally or loses code if certain NLS are embedded in literals or comments.

  2653232 (1089946)
- Previously, if a %ENDFILE; was embedded within an EXEC SQL statement, the EXEC SQL preprocessor, mfexecpp, would not precompile the application successfully.

  2641151 (1088759)
- When compiling complex PL/I programs with multiple %INCLUDE files at multiple levels which utilize macro logic, an abend no longer occurs when passing -nodebuginfo to the macro preprocessor.

  2640069 (1088712)
- A warning no longer generates when REORDER is used a parameter to a macro, and REORDER; appears in the same place as a keyword parameter to a macro as it appears for the OPTIONS macro as used by a customer.

  2609133 (1087701)
- The Open PL/I Macro Preprocessor's NOTE function now handles all valid built-in functions suitable for macro usage.

  2607126 (1087285)
- When the macro preprocessor was making multiple passes on the same portion of code, %ENDFILE and %FILE were not always generated in Column 1. This was causing issues for the CICS and SQL preprocessors.

  2605895 (1087132)
- The output from "NOTE" in PL/I was being incorrectly written to STDERR instead of STDOUT. STDERR was then causing a loop when you ran it from within the Visual Studio IDE.

  2603654 (1086977)
- An unterminated quote caused the Open PL/I Macro Preprocessor to loop.

  2591348 (1085759)
- The Open PL/I Macro Preprocessor would split compound operators when one of the shorthand operators (+=, *=, -=, or \=) straddled the 255-byte boundary used to word wrap in the macro text. The macro preprocessor did not recognize them as shorthand operators.

  2587494 (1085437)
- The Open PL/I Macro Preprocessor now supports ||= statements.

  2549371 (1082126)
- When you used the PL/I Macro Language PARMSET() built-in, it would sometimes incorrectly report PARMSET() as true for an argument that had not been passed in. The problem was most prevalent when a combination of KEYWORD invocation and positional parameter invocations were intermixed multiple levels deep.

- The Open PL/I Macro Preprocessor supports the %OPTION statement.

Open PL/I RTS

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- The attributes of FBA 121 are no longer forced into the catalog if no DCB is specified on the file DCL and no DCB is provided in the JCL DD declaration. Incorrect results occurred when LINESIZE() was specified on the open. The correct behavior is the LINESIZE value +1 for the CTLASA character.

  2662614 (1090784)
- A HANG no longer occurs at End of Step when running with full CTF enabled and with SYSPRINT opened multiple times with one of them using a file VARIABLE. Note that enabling COBOL RTS #SYSPGM and an undetermined amount of other tracing appeared to bypass this issue in Enterprise Developer 2.1 Update 1, as did limiting the amount of PL/I tracing.

  2662383 (1090814)
- Previously, the maximum LRECL for VSAM Entry Sequenced datasets was calculated incorrectly to be four bytes less than the real maximum length.

  2662147 (1090749)
- Previously, when using a DISPLAY(xxx) REPLY(mystr); syntax, the contents of the DISPLAY statement were not seen on the console or in the JOBLOG until AFTER the REPLY was satisfied.

  2661958 (1090744)
- Declaring an ON ENDPAGE for a file in a procedure that drives procedures which attempt to execute a SIGNAL ENDPAGE (xxx) for the ON ENDPAGE no longer creates a mismatch of the file to the ON UNIT.

  2659472 (1090624)
- DSNTIAR now returns an error message if the buffer size is larger than 1000 bytes.

  2657101 (1090406)
- Previously, if using a COBOL "Main" program to drive PL/I subroutines, the application abended the second time the COBOL program was executed within the same Batch Initiator.

  2649712 (1089898)
- Using PUT DATA to a VBA file no longer occasionally results in an incorrect record length creation or an IO_ERROR_105 occuring. A boundary violation caused by the internally held logical maximum record length for a STREAM PRINT SYSOUT with DCB overridden to VBA being incorrectly set to the LRECL rather than physical LRECL was causing the issue.

  2649238 (1089582)
- Extra blank lines no longer generate erroneously page breaks.

  2644985 (1089212)
- When executing an application that streams IO to a print file using a LINESIZE > 121, an error would intermittently occur after ENDPAGE logic triggered within the application and multiple lines of output were driven as part of a single PUT EDIT statement.

  2641134 (1088772)
- A problem with using the TRIM built-in with a char(*) parameter of length 0 has been fixed.

  2638161 (1088552)
- Errors no longer trigger when a PUT DATA() or a PUT LIST() is attempted on a variable of type AREA, or on a structure containing an element of type AREA, and <...> now signifies the AREA variable contents.

  2618457 (1088918)
- Using PUT EDIT statements with a control-format item that specifies a SKIP that triggers an ENDPAGE condition no longer results in memory corruption if an additional control-format item specified COLUMN(s) when returning from ENDPAGE and continuing to generate output.

2614479 (1088196)

- Writing or rewriting to a record contained in an Open PL/I "Regional(1)" file no longer triggers the ONKEY condition if a key of 0 was used.

2612112 (1087762)

- Accessing PL/I Regional(1) files from an Open PL/I Program no longer triggers an ONKEY condition when attempting to read KEY(0) from an OPEN PL/I Program. This behavior should have returned 'FF'x if the record was not present or the actual record if present.

2611584 (1087690)

- Reading from a PL/I "Regional(1)" dataset into a "CHAR VARYING" field no longer results in garbled data being returned from a successful read.

2611386 (1087674)

- When using a VSAM RRDS to emulate PL/I Regional(1) file, a trap no longer occurs if the RECSZ() parameters for AVG, MAX used to define the VSAM RRDS are identical.

2611383 (1087675)

- A compiler issue causing RTS Error 198 during Finalization no longer occurs.

2607689 (1087322)

- The error message CASSI1745E Error loading MFPLI support (cannot find MPLICPPM) no longer appears in Console.log when Enterprise Server starts.

2605091 (1087696)

- If more than 65,535 Open/Close cycles occurred in a long running standalone (.exe) PL/I application, then an RTS 13 error occured.

2591161 (1085752)

- Input/Output speed has increased for PL/I sequential file access.

2589081 (1085599)

- Open PL/I now provides support for the generation of ASA Print control characters when writing to files declared with the STREAM/PRINT Attributes. See the documentation for the rules describing how the characters are generated.

2527865 (1080288)

- An ASRA abend no longer occurs on subsequent access attempts when trying to utilize PLIDUMP in a CICS Trancode driven in a given SEP.
- Previously, when running a PL/I batch program under the control of JCL, if the program generated a call to PLIDUMP() on Windows, the .dll files were held by the Batch Initiator until it was recycled.
- Previously, if using an Open PL/I stream IO within a CICS trancode to drive output to SYSPRINT or SYSOUT, an abend or memory corruption occurred on the second invocation of the trancode.
- RTS Condition 142 is not longer raised when attempting a PUT DATA(); on a variable or structure containing an OFFSET variable.

Open PL/I SQL Preprocessor

- Previously, "mfexecpp –sql odbc" included the SQLCA definition twice.

2648060 (1089443)

- The DB2 preprocessor did not generate database code when an EXEC SQL INCLUDE sqlca was not defined in application.

2641212 (1088770)

- A problem with a sporadic incorrect occurence of Error 2000A has been fixed.

2606039 (1087150)

- The mfdb2 pre-compiler did not tolerate the "BUFFERED" attribute when it was used on a file declaration.

2603472 (1086978)

- An ECM for Open PL/1 to translate EXEC DLI statements into the necessary calls to the DLI interface is now provided.

2578517 (1084612)

RTS

- Using the CBL_EXEC_RUN_UNIT library routine to repeatedly execute non-COBOL processes no longer causes a 'COBRT105 Memory Allocation Error' error to be produced.

2651531 (1090239)

- The library routine C$OSLockInfo now works correctly when used in a program compiled with the DIALECT(RM) directive.

2643661 (1089044)

- The RANDOM intrinsic function, when compiled in a program using the HOSTNUMMOVE directive, no longer produces a runtime error if the argument is a literal or a numeric expression.

2596268 (1086174)

- Dynamic memory allocations using the CBL_ALLOC_MEM call are no longer limited to 2Gb on 64-bit processes.

2513886 (1079960)

- On Windows, if an error occurs when creating a coredump file, then a message box is no longer displayed for core_on_error settings greater than 127.

2509666 (1079870)

- Reading from STDIN has been enhanced when STDIN is being redirected from a file or from a pipe line on UNIX. It now automatically reflects the file type without the need for you to use any runtime tunables. The record size line sequential files return is now the size of the data that is actually read. The full record size is now read for record sequential files or when you use CBL_READ_FILE.

2468412 (1075670)

- When using the kterm terminal emulator, any new terminal Windows created by COBOL will now be kterm, in preference to xterm. By default, it will use ShiftJis kanji mode and 16 point fonts but these can be overridden by setting the COBTERMOPTS environment variable. For example, to use EUC kanji mode and 14 point fonts, use: export COBTERMOPTS="-fn a14 -fk k14 -km euc"

Setup Issues

- The Start and Stop scripts for mfcesd and lserv have been improved for handling the possible states that services and system files may be in.

2657001 (1090384)

- Previously, when PLIDUMP was created under Enterprise Server, some of the information was missing because of a missing message file in $COBDIR/lib. This message file is now also available in $COBDIR/lang/default so that it can be found and used when creating PLIDUMP files on deployment platforms.

2615412 (1088915)

Setup Issues (UNIX)

- startmfcesd.sh has been updated and no longer includes /tmp/mfcesclient* which it starts up. for i in `ls /tmp/mfcesclient* 2>/dev/null` do rm -rf $i done If no files are present, remove command is skipped.

2657021 (1090386)

SQL: DB2 ECM

- A required file for the DB2(GEN-SQLCA)directive was missing, causing the directive to work improperly.

  2659056 (1090501)
- The DB2 pre-compiler now saves or restores the RETURN-CODE special register so executing EXEC SQL statements no longer affects that register.

  2655173 (1090353)
- Previously, the DB2 preprocessor sometimes incorrectly defined the number of host variables to use for a singleton SELECT when a group host variable was redefined using FILLER.

  2613602 (1088069)
- Previously, the DB2 preprocessor would not generate calls to a system program unless it was linked in.

  2611937 (1087736)
- Previously, the DB2 preprocessor might incorrectly flag indicator arrays as invalid.

  2546456 (1088155)

SQL: HCO for SQL Server

- Previously, the SPD Generator tool could generate invalid COBOL parameter names if no parameter name was pecified and the parameter type was DECIMAL.

  2664672 (1091009)
- Some thread safety issues that occurred in SQL run-time allocation under load have been resolved.

  2658581 (1090459)
- The performance of forward-only, read-only cursors in SQL CLR stored procedures has been improved and a new Compiler directive, SQL(OPTION=OPTIMIZESPCURSORS), has been added to provide additional control.

  2644905 (1089182)
- When SQL(DETECTDATE) is used with SQL(DIALECT=MAINFRAME), and the mainframe time format is ISO, the second component of the time value must be present. This is to avoid ambiguity and unwanted conversion of simple numeric character strings.

  2641203 (1090111)
- Under HCOSS, SQL error messages returned from calls to DSNTIAR did not always get translated to EBCDIC when executing the application in that mode.

  2615782 (1088148)
- There are new directives, SQL(OPTION=SQCLRTRANS) and SQL(OPTION=SPCOMMITONRETURN), that resolve some issues with stored procedures that expect COMMIT and ROLLBACK to behave the same as mainframe DB2.

  2611786 (1087718)
- You can now use DISPLAY statements with COBOL stored procedures for diagnostics in the same way as with applications, when you set the SQL(OPTION=SPDISPLAY) directive.

  2598617 (1086941)
- Previously, after a FETCH NEXT ROWSET statement, the number of rows returned was incorrectly reported in SQLERRD(3).
- Dynamic SQL statements executed by EXEC SQL EXECUTE IMMEDIATE are now correctly converted to T-SQL when the SQL(DIALECT=MAINFRAME) directive is set.

SQL: OpenESQL

- Previously, the OpenESQL runtime did not work correctly with the unixODBC 2.3.1 and later ODBC Driver Managers on AIX platforms.

  2658290 (1090583)
- Using a java.math.BigDecimal host variable as an input parameter to SQL statements caused an ORA-17041 error.

  2652362 (1089847)
- Previously, when using OpenESQL for ADO.NET, an SQL-CODE error occured when a query timeout was set from a host variable.

  2650030 (1089675)
- Previously, OpenESQL threw an exception while attempting to set a default JDBC login timeout at connect time.

  2647801 (1089421)
- When using the Progress Oracle ODBC driver, the OpenESQL runtime incorrectly reported a failure for a successful INSERT when a successful INSERT was followed by a failing INSERT.

  2646958 (1089336)
- OpenESQL now accepts EXEC SQL DECLARE x STATEMENT END-EXEC statements, where x is a dynamic SQL statement name. This statement has no effect but is accepted for compatibility with other ESQL SQL dialects.

  2643884 (1089076)
- When using SQL Native Client or SQL Server Native Client ODBC drivers, the PIC N(xx) USAGE NATIONAL host variable caused an error when used with the NVARCHAR(MAX) SQL Server data type.

  2601192 (1087619)
- When executing code compiled for the JVM, if the run-time system encounters a duplicate symbol, it now reports an RTS119 error, "the symbol is not unique".

  2598694 (1086469)
- Previously, the precompiler incorrectly reset run time information in large Object-Oriented applications that had SQL statements across multiple methods which resulted in incorrect SQL runtime errors.

  2597319 (1086681)
- When compiling Oracle applications and using SQL(CHECK), errors were reported for SELECT statements only. This has been corrected to report errors for all statements.

  2566933 (1083631)
- You no longer receive an internal buffer error message when compiling OpenESQL applications under an MBCS UTF8 locale.
- EXEC SQL DESCRIBE or PREPARE INTO now return the correct sqltype for VARCHAR columns when the SQL(OPTION=DESCRIBEVARCHAR) directive is used. The SQL(DATE) and SQL(TIME) directives now apply to date and time host variables that are declared with SQL TYPE as well as with PIC X.

Vision File System

- RMFM now correctly generates 04,05 (and 04,06) statuses and the file status variable contains 04.

XML Extensions

- A compiler error when processing XML extensions with dialect(rm) set has been fixed.

  2589841 (1085641)

- Previously, in native code, XML Extensions treated negative literals (such as in the value of a name/value pair for XML SET XSL-PARAMETERS) specified as parameters in native code as a large positive literal. It now correctly treats them as negative literals.

XML syntax support runtime

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- Block comments in XML instance documents no longer cause a 201 parsing error.

  2618943 (1088554)

- The XML preprocessor now generates correct output for the COUNT IN clause.

  2596137 (1086285)

Updates and SupportLine

Our Web site gives up-to-date details of contact numbers and addresses.

Further Information and Product Support

Additional technical information or advice is available from several sources.

The product support pages contain a considerable amount of additional information, such as:

- The WebSync service, where you can download fixes and documentation updates.
- The Knowledge Base, a large collection of product tips and workarounds.
- Examples and Utilities, including demos and additional product documentation.

To connect, enter *http://www.microfocus.com* in your browser to go to the Micro Focus home page.

Note: Some information may be available only to customers who have maintenance agreements.

If you obtained this product directly from Micro Focus, contact us as described on the Micro Focus Web site, *www.microfocus.com*. If you obtained the product from another source, such as an authorized distributor, contact them for help first. If they are unable to help, contact us.

Information We Need

However you contact us, please try to include the information below, if you have it. The more information you can give, the better Micro Focus SupportLine can help you. But if you don't know all the answers, or you think some are irrelevant to your problem, please give whatever information you have.

- The name and version number of all products that you think might be causing a problem.
- Your computer make and model.
- Your operating system version number and details of any networking software you are using.
- The amount of memory in your computer.
- The relevant page reference or section in the documentation.
- Your serial number. To find out these numbers, look in the subject line and body of your Electronic Product Delivery Notice email that you received from Micro Focus.

On Windows, if you are reporting a protection violation you might be asked to provide a dump (`.dmp`) file. To produce a dump file you use the **Unexpected Error** dialog box that is displayed when a protection violation occurs. Unless requested by Micro Focus SupportLine, leave the dump setting as `Normal` (recommended), click **Dump**, then specify a location and name for the dump file. Once the dump file has been written you can email it to Micro Focus SupportLine.

Alternatively, you might be asked to provide a log file created by the Consolidated Tracing Facility (CTF) - a tracing infrastructure that enables you to quickly and easily produce diagnostic information detailing the operation of a number of Micro Focus software components.

On UNIX, you can use the Micro Focus UNIX Support Scan Utility, `mfsupport`, to create a log file that contains the details about your environment, product, and settings. The `mfsupport` script is stored in `$COBDIR/bin`.

To run `mfsupport`:

1. Start a UNIX shell.

2. Set COBDIR to the product with issues.

3. Execute `mfsupport` from a directory where you have write permissions.

This creates a log file, `mfpoll.txt`, in that directory.

4. When the script finishes, send the `mfpoll.txt` file to your Micro Focus SupportLine representative.

> **Note:**
>
> If COBDIR is set to a location that does not contain `etc/cobver`, the script outputs the contents of `/opt/microfocus/logs/MicroFocusProductRegistry.dat` which keeps a list of the installed Micro Focus products.
>
> If COBDIR is set to a location that does not contain `etc/cobver` or COBDIR is not set, `mfsupport` gives you the option to search your machine for possible product locations. Note that the search can take some time if you have a large amount of disc storage and files.

Creating Debug Files

If you encounter an error when compiling a program that requires you to contact Micro Focus SupportLine, your support representative might request that you provide additional debug files (as well as source and data files) to help us determine the cause of the problem. If so, they will advise you how to create them.

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